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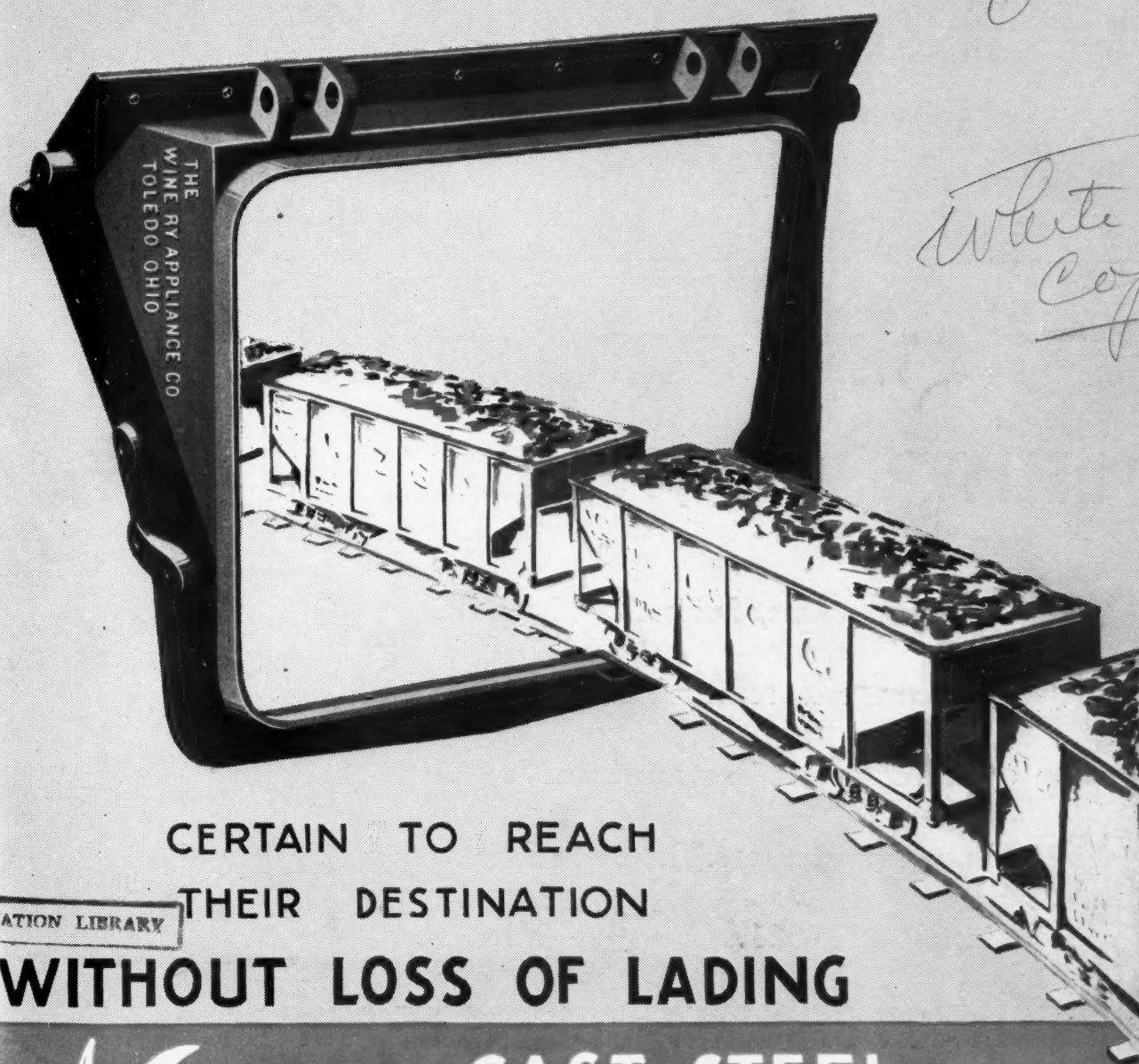
APRIL 12, 1941

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Railway Age

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34 **SELF-SEALED** 6



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Railway Age

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Published every Saturday by the
Simmons-Boardman Publishing
Corporation, 1309 Noble Street,
Philadelphia, Pa., with editorial
and executive offices: 30 Church
Street, New York, N. Y., and 105
West Adams Street, Chicago, Ill.

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Terminal Tower

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1081 National Press Building

SEATTLE
1038 Henry Building

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550 Montgomery Street

LOS ANGELES
530 West 6th Street

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The Railway Age is a member of
the Associated Business Papers (A.
B. P.) and of the Audit Bureau of
Circulations (A. B. C.)

Subscriptions, including 52 regular
weekly issues, and special daily edi-
tions published from time to time
in New York, or in places other
than New York, payable in advance
and postage free. United States,
U. S. possessions and Canada: 1
year, \$6.00; 2 years, \$10.00; foreign
countries, not including daily edi-
tions: 1 year, \$8.00; 2 years, \$14.00.

Single copies, 25 cents each.

H. E. McCandless, Circulation
Manager, 30 Church St., New York,
N. Y.

Vol. 110

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The Railway Age is indexed by the Industrial Arts Index and also by the
Engineering Index Service

PRINTED IN U. S. A.

TIME



*Servant
or
Master?*

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RAILWAY AGE

The Railroads and the State of the Nation

Nothing in this country today is so remarkable as the complacency of the great majority of the people, who do not recognize the morbid forces now at work among us, and against us, as contrasted with the deep apprehension which afflicts those few who do recognize these forces for what they are. As is often true, there is now a short-range trend in our affairs that is upward and a long-range trend that is downward; and, as usual, a large majority are aware of and consider only the short-range trend. What is occurring in general business is well illustrated by what is occurring on the railroads. The trend of freight loadings has been upward now for ten months; and during the first quarter of 1941 it was so sharply upward that March loadings were relatively the largest in any month since December, 1930; while in the last week in March they were relatively the largest since October, 1930. In the week ending March 29 they were 26 per cent larger than in the same week of 1940. If from that date they should increase only seasonally over last year until next fall, they would reach a peak in October of more than 1,050,000 carloads weekly, as compared with last fall's peak of 838,000 loads.

Stock Prices Overshadow Earnings

This rapid increase in traffic when railway managements have had operating expenses down to the lowest practicable minimum has been causing a phenomenal increase in net earnings. Net operating income in January and February was at an annual rate of 4.27 per cent. If it should be made throughout 1941 at that rate it would amount in the entire year to more than 1 billion 100 million dollars—as compared with only 682 million last year.

Much this same kind of thing is occurring in business in general. That is why both freight loadings and railway gross earnings are increasing so much. But what is thought about what is going on by those who really study economic matters—who consider **causes** as well as **effects**, and whose opinions are worth something regarding the long-range trend as well as the short-range trend? The largest class whose opinions

about such matters are entitled to consideration are investors—those who buy securities when they believe business prospects “for the long pull” are good; and the consensus of their opinions as it is being expressed in current stock market prices is not encouraging.

On April 5 the Dow-Jones average of railroad stocks on the New York stock exchange was 29.57 and the industrial average 124.32. On the same date in the following-mentioned years the averages were: 1940, rails, 32.02, and industrials, 151.40; 1937, rails, 60.56, and industrials, 184.19; 1936, rails, 49.35, and industrials, 161.99; 1931, rails, 95.84, and industrials, 169.72; 1930, rails, 156.39, and industrials, 289.96. Why are both railway and industrial stocks selling for so much less **than even a year ago** when apparently both current and prospective business was worse than now?

It recalls, but does not parallel, one of those great floods in the Mississippi Valley. In the lower valley, when the crest of the flood is still far to the north, everything may be serene and pretty much “business as usual.” To look at one of those towns, it is hard to make the mind picture how, in a week or ten days, it is going to be fighting against annihilation. But the experts know what is going on in the upper valley, and the population has learned by experience to heed their warning—so when the flood comes, the people are ready for it, and it does not wipe them out, after all.

Why Warnings of Economic Disaster Go Unheeded

By contrast, the citizens who are competent to recognize America's present dangers have no such following with the mass of the people as do the scientists and engineers who foretell the flood stages in the Mississippi. In the field of economics or political philosophy, a man who has spent his life in study and analysis seems to be popularly supposed to know less than the fellow who harangues the crowd with ideas more comfortable to hear. A man can learn by experience in one lifetime to heed the intelligent warnings he may receive about an approaching flood—but he cannot achieve similar wisdom by personal experience alone in regard to a great economic or political cataclysm,

because, fortunately, such catastrophes do not occur as often as once in a lifetime. Knowledge of such events comes only from a study of history and political and economic philosophy, or from heeding the advice of those who have served their apprenticeship in these branches. The modern temper is distinctly opposed to such "theorists." Instead, let's turn them off and listen to a crooner, or to some fellow who says pleasant things about our "social progress" and our military invincibility (achieved always by the "other fellow's" hard work, expense and sacrifice—never by that of any one of the speaker's audience.)

We have heard persons ask why none of the experts gave warning in 1928 or 1929 that stock market prices had become much too high, and that unless their advance was arrested there was sure to occur a collapse that would cause general disaster. The fact is, real experts did give timely warning; but the mob which invaded the stock market did not read the warnings, or refused to heed them. Curiously enough, it is through stock market prices that the experts are now giving warning that, because production and earnings are now being inflated by artificial and temporary influences, "business" is not as good as it appears to be. And on every hand we see the mob that rushed into the stock market in 1929 to get rich quick now ignoring the warning of stock market prices and demanding advances in wages and prices to enable it to share in the "war profits"—thus stimulating a tendency toward general and disastrous inflation that is being promoted, anyway, by huge and increasing government expenditures.

The Solemn Obligation of Those Who Know

There is nothing inevitable, however, about realization of the gloomiest fears of those who are able to name, describe and measure the destructive economic and social currents which are beginning to lap at our levees. These currents can be turned aside, if those who understand them will fight them courageously; and will send effective Paul Reveres out among the people to bring in recruits. Protection cannot come from those who do not know what is happening. It won't come from those who are helping the flood along, in the hope of looting the wreckage. It can come only from those who know what we are up against, and who nevertheless have got sufficient virility not to shrink from what needs to be said and done merely because it is more pleasant to say and do nothing.

If we were permitted to name names, which we are not, we could cite a man known to almost everyone, who is as well-informed, perhaps, about international relations as any man living, who believes not only that the United States will soon be involved in the war, but that the conflict may last from 10 to 30 years, with extreme impoverishment of all nations engaged in it. For every competent economist in the country who sees no serious dangers threatening free enterprise it would be possible to name a dozen who believe the

country is headed toward socialism (i. e., government ownership of most important business, with all their employees and managements on the public payroll and, hence, having politicians for bosses). It would be difficult to find an experienced observer, not himself a revolutionist, who believes that certain leaders of organized labor can long continue their present irresponsible behavior without bringing, not only a check, but quite likely retribution as well down on the heads of all labor organizations. Just like the railroads of the present day are still being penalized for misdeeds of two or three generations ago.

How Disaster to the Railroads May Be Avoided

These considerations are not just "theories," as far as railroad people are concerned. They are of the utmost practical significance. The chickens (or, more accurately, the buzzards) of uneconomic and impolitic behavior always come home to roost—and unless an unduly large flock are going to settle down on the railroads and their employees, they must bestir themselves. Railroad people, as such, can do very little to prevent this nation's being embroiled in the war. There are sound reasons, which need not be gone into here, why we should extend such aid to Britain as will not endanger our own defenses—although these reasons do not justify the insults our government has been bestowing, one after the other, on the Axis nations in the apparent effort to provoke them into open hostilities against us. But whether we fight or not, there are questions which bear on the welfare of everybody connected with the railroad business—and to which the answers lie very largely in the hands of railroad men themselves. These questions may be divided, for convenience, into two categories—specific and general.

In the specific category fall such questions as the following: **Has the railroad situation improved permanently, so that wage increases or other increased expenses of a permanent character can be safely assumed (considering the welfare of employees, and not just that of railway managements, creditors and owners)?** Would employees believe the railroad managements were acting wisely and with proper concern for prospective post-war conditions if, at a time like this, they should float large issues of long-term bonds at high rates of interest, and thereby obligate themselves to pay largely increased fixed charges for an indefinite period? Would not assumption at this time of large fixed increases in costs of any kind greatly add to the complexities of the post-war period, and make necessary the furloughing, at that time, of thousands of employees whose services, otherwise, might be retained? If employees will only bear in mind the fact that, on the basis of present freight rates, their share of railroad revenues is 47 per cent of the gross, it will be clear to them that the higher the **wage rate** is made, the fewer will be the men for whom jobs can be found. This is not a matter of concern for the average railroad employee

at a time like the present, when employment is on the increase—but it will come home to him very acutely if, after the war, weekly carloadings fall to a half-million or less.

And what about the St. Lawrence Seaway and the various "superhighway" programs? Are railroad men going to content themselves by opposing these projects merely with their voices, and by passing resolutions, or are they going to consider them, as in fact they are, *anti-labor measures*? Heretofore, it has been the usual practice of the railroad unions to use their votes for or against candidates for political office solely on their records as to so-called "labor legislation"; and the unions have, time and again, given their

endorsement to candidates who were notorious waterway and superhighway enthusiasts. Such candidates were recommended by some of the unions as recently as the elections last fall. There is no surer way of abolishing railroad jobs than to continue to follow such an unrealistic political program. "Full crew" measures and other such restrictive schemes, as has been demonstrated time and time again in these pages, do not add one iota to total railroad employment—a fact which will become clear to anybody who will take the trouble to study the facts. So the politician who tries to pose as a friend of labor by favoring such legislation, while he ardently aids the competitors of the railroads in every way that he can, is clearly a phony "friend,"

"Herrenvolk" Among the Truck Operators

The long-distance common carrier truckers are a small minority of the motor carrier industry numerically, but so far their superior financial position and the traffic they have at their command has enabled them pretty much to dominate the industry. They are the "Herrenvolk" of the trucking business—the "master race," occupying a position not unlike that which the Germans enjoy in Poland and other conquered countries.

This observation is based upon information given us from inside the trucking industry itself. On its face, it carries such strong conviction that it would be as hard to shake as the equally-significant observation made in T. N. E. C. Research Monograph 21. We quoted that observation last week, but it will stand repetition, viz:

"In the railway industry, it was the original purpose of regulation to prevent monopolistic price increases by establishing maximum rates. In the trucking industry, it is the apparent purpose of regulation to prevent competitive price reductions by establishing minimum rates."

The language of the researchers for the T. N. E. C. is moderate. The dominant interests in the motor carrier industry have continuously worked for monopolistic rates, and are even now in the process of making monopolistic rate increases—based not upon conditions in the motor carrier industry, as the law provides, but upon the monopolistic practices which *naturally* characterized the railroad industry before the advent of the truck. The only difference is that the trucks are making their rates higher than the rates of the former railroad monopoly. Is this "progress" in transportation—about which the spokesmen for the truckers are wont to boast in their speeches and their advertisements? If so, the shipping community and the consuming public could get along without such "progress," and be money in pocket.

This "Herrenvolk" influence in the motor carrier industry has caused the industry to expand far beyond its sound economic radius—hot-housed by an inflated rate basis, which has no reasonable relation to the cost conditions in the industry. And, like any hot-house plant, the industry is thus subjected to the danger of disaster, should the chill wind of genuine competition blow upon it. The railroads are in a position to make sound rates well below those demanded by the long-distance truckers

—the latter seem to be staking everything they have on the gamble that the I. C. C. is going to embrace a high-price, artificially-monopolistic rate policy.

The small short-haul operator with his few trucks cannot be censured for his unhappiness at these developments—he is just common folks and does not have the power to buck the strong tide that is carrying him along against his better judgment.

This policy of jacking up prices by the method of the monopolistic cartel had its origin in the days of the Blue Eagle. It will be remembered in those days that these same carriers were among the strongest advocates of N. R. A. regimentation; it was only after the Supreme Court had thrown this primitive totalitarian experiment out of the window that they shifted to advocacy of I. C. C. regulation.

The difference between now and then is that today they have abandoned even polite references to recognized principles of economic freedom and are undertaking to charge all they can get on some traffic, on the one hand; and as little as it takes to buy gasoline and oil in the direction of their light loading. During N. R. A. days they did, at least, make a gesture in the direction of economic principles by announcing their intention to base their minimum rates on the cost of performing the service.

It seems now that the only hope of checking the cartellization of transportation will be for the railroads to press the revision of their competitive rate structure to reflect their superior economy. The I. C. C. has indicated by its refusal to suspend and investigate these proposed monopolistic truck rate increases that it has no present intention of arresting this development—so wasteful of capital and so disdainful of the welfare of the users of transportation.

There is nothing intrinsically evil in a monopoly, if it is a *natural* one (i. e., if costs of service to the public are lower under monopoly than under competition). The problem is to regulate it so that the advantages which it develops are properly shared with the consuming public. But *artificial* monopoly-pricing, where a natural monopoly no longer exists, cannot possibly protect the public interest, because the system has no *net* economic benefits to let the public in on. It is a one-sided device essentially predatory in nature.

and continued support of such a man raises a question of the competence of his supporters.

The Rule of Law or of the Jungle—Which?

The two questions printed above in bold-face type constitute specific immediate decisions which railroad men have to make, and the answers to which will determine the welfare, or the lack of it, of railroad men for a long time to come. Railroad employees cannot make decisions on these questions wisely in their own interest unless they have the necessary facts; and, so far neither their union leaders nor railroad managements have provided them with such facts.

Aside from these immediate and specific questions, there are others which are just as important, but are more general and long-run in character. One such question is: **Do we in America choose hereafter to live under a regime of law, or are we going in for a period of class conflict, in which right will be assumed to rest with the side with the most votes or the most half-bricks?**

In reading newspaper accounts of recent industrial conflicts, it is not unusual for the reader to pass judgment in accordance with his prejudices. If he is a friend of militant unionism, he derives a certain amount of satisfaction in reading where pickets have beaten up non-striking workmen trying to enter struck plants. If, on the other hand, the reader has a feeling of unfriendliness to the more hardy varieties of unionism, he may read with approval of pickets having been roughhoused by police. In the last five or six years there seems to have been a disintegration of the rule of law in industrial disputes. Judges and law enforcement officers have been reluctant to oppose or punish downright criminal seizures of property by "sit-down" strikers. There appears to be little disposition to bring the weight of the law down on the heads of violators—whether they be on the union or the employing side. Instead, the whole job is turned over to allegedly "realistic" mediators—who attempt to patch up a temporary armistice, not in accordance with justice but with the relative strength of the contending factions. The weaker faction is urged to make concessions that justice does not require, with the alternative of worse injustices if the conflict continues.

How to Make Life "Poor, Nasty, Brutish and Short"

This last, of course, is the foretaste of the lawless state of affairs which has prevailed from time to time in minor Latin-American republics; and in many countries in Central Europe. It is a condition of perpetual turmoil. If the only way a man can get justice for himself is by organizing a gang and going out and taking it by force, then people soon lose interest in adding to their wealth by hard work and thrift. "In such a condition," as the 17th century English philosopher Hobbes describes it, "there is no place for industry; because the fruit thereof is uncertain; and con-

sequently no culture of the earth, no navigation, nor use of the commodities that may be imported by sea; no commodious building; no instruments of moving, and removing such things as require much force; no knowledge of the face of the earth; no account of time; no arts; no letters; no society; and which is worst of all, continual fear, and danger of violent death; and the life of men, solitary, poor, nasty, brutish, and short."

Whatever may be the interpretation put upon acts of violence and coercion by timid judges or mediators—the fact remains that such acts are against the underlying laws which arise from the nature of society and human beings, as well as contrary to existing statutes. The creation of property which increases the standard of living of a people is the principal essential of a civilized society; and a civilized society cannot thrive where coercion by private individuals is long permitted; or where the organized machinery of the state is used to deprive people of their property or of their right to work.

This paper has no sympathy with proposals for legislation to prohibit strikes in "defense" industries or any other industries. Such legislation would restrict the present legal freedom of working men; and we are not in favor of further restricting the legal freedom of anybody. We are in favor, instead, of enforcing **existing** laws under which nobody but public officials has any right to use force to compel anybody else to do anything or not to do anything. Such use of force by private individuals, or private organizations of individuals, is a crime under our existing laws. Why does not the public, then, instead of talking about passing more laws, effectively demand that its public officials shall enforce existing **criminal** laws forbidding private individuals, whatever their pretext or purpose, from maltreating other citizens or forcibly attacking or seizing their property?

If Those Who Know the Truth Keep Silent—What Then?

If a government allows itself to become so weak and so corrupt that it permits or connives in such injustice, either general chaos ensues, or it is succeeded by some other form of government which will enforce the fundamental law. Facing the danger of external war, this country cannot risk internal chaos. Nor would there be any consistency in taking sides in a European war against a man who substitutes "might makes right" for the rule of law, while we encourage exactly that point of view in the conduct of our internal affairs.

The above observations are set down without rancor, without partisanship, without personalities. America itself is in peril, including the most humble citizen as well as the most highly-placed—in peril from attack from within, as well as from without. And, in particular, the well-being of everybody in any way connected with the railroad industry—from trackwalkers up to executives, including the executives of the unions—is teetering in the balance. Only in a widespread

dissemination and recognition of the fundamental facts of the present condition of the nation, and of the railroad industry in particular, can there be any hope that action will be taken commensurate with the critical circumstances. If the highly-competitive railroad industry has no more wisdom in its management and its rank and file than the coal industry and its employees, with the inflationary and rigid wage increases which they have agreed upon, then we can all look to times so bad during this war or after it is over that those of recent years will look like prosperity.

One thing this industry needs is a simply-written and illustrated pamphlet setting forth, without propa-

ganda, the basic facts which determine the volume of railroad employment; and the conditions which will promote the future security of railroad jobs, and those things which would detract from such security. Quite likely many employees would not read such a pamphlet, but some of them would; and an understanding of its contents could be made a prerequisite for promotion to supervisory positions. If even 10 or 15 per cent of railroad employees—particularly the younger ones, who would be the first to suffer from depression of railroad traffic—were acquainted with such facts, it is probable that the suicidal tendencies now so evident in the industry would be arrested, if not altogether scotched.

An Investor's View on Consolidation

"Duplication of railroad facilities, momentarily obscured by war, remains nonetheless a problem which must be solved for any true economic and financial balance of our transportation system.

"Much has been written on co-ordination and consolidation. What actually has been done to accomplish either? Precisely nothing! A study of the mass of reports indicates that the real obstacles preventing the achievement of economies from co-ordination and consolidation are to be found in various interests in the following order of importance: (1) labor, (2) management, (3) communities, and (4) shippers. Co-ordination means cooperative action in a common interest over particular divisions or at terminals by individual carriers. Consolidation means actual unification of companies under single ownership or control and managed as a unit. Both mean fewer employees among the workers and the management. Both mean, eventually, less tax receipts for the communities and abandonment of facilities. The shippers, too, will have fewer competitive transportation facilities available for their use. . . .

"Take passenger service for example. Why do the railroads continue to compete among themselves for fast passenger traffic when the country is on the threshold of a vast development in commercial passenger airways? I. C. C. statistics show that there is not a major railroad in the country that operates its entire passenger service at a profit before any allowance for interest on the capital invested in passenger facilities. It is startling, too, to realize that the competitive freight traffic position of the railways relative to total business activity has declined over one-fifth since 1928. Compared with 1928 levels taken as 100, the I. C. C. Bureau of Statistics says that the index for the production of commodities in 1939 was 91.2, the potential railway tonnage—88.7, and the actual railway tonnage—69.6.

"Who are the real sufferers under this policy of futilely continuing railroad competition? The principal losers are the railroad security holders. Unorganized and ineffective to protect their interests, more so today than ever before, railroad security holders are certain to lose more and more of their equity in the rail transportation industry. Anyone familiar with recent rail reorganization history

under the Bankruptcy Act must know that not only the stockholders, but thousands of bondholders, representing hundreds of millions of dollars of fixed and equity capital, have seen their entire, or the greater part of their investment, wiped out.

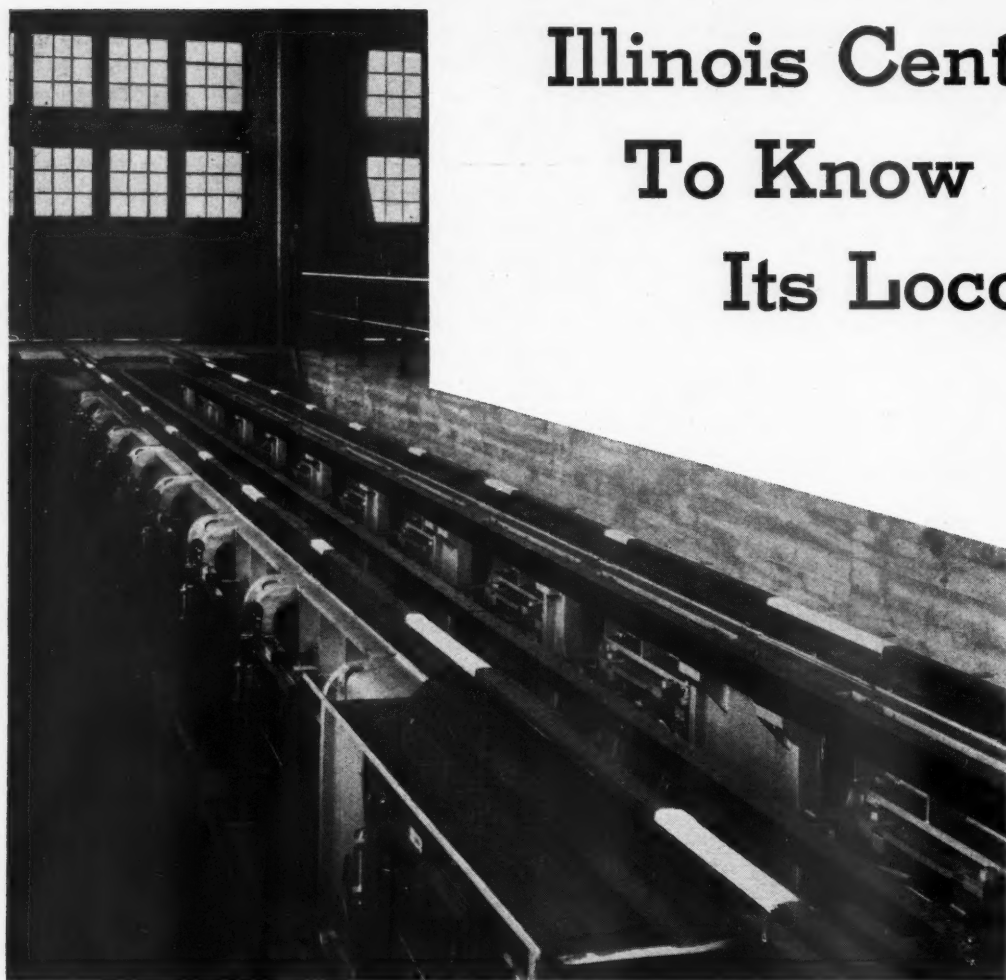
"This group must insist that labor and management make a serious attempt to co-ordinate and unify operations wherever possible. Security holders themselves, too, are to blame to a certain extent for their apparent inability to compose their differences and work to a common solution permitting early capital reorganization of the many bankrupt carriers. It is now too soon to anticipate that security holders will amicably and reasonably exchange their existing securities for new ones under a consolidation plan. The extended hearings before the I. C. C. and the District Courts, and the filing of schedules and legal briefs, ad infinitum, clearly demonstrate the problems of voluntary unification. Notwithstanding the complexities created by the owners of the railroads themselves, it is high time that something was done by private initiative through co-ordination and consolidation to improve the competitive position of the railroad freight and passenger business. . . .

"Stockholders, junior debenture and mortgage bondholders of the railroads have a common interest in exerting every effort to compel their managements to co-ordinate and consolidate the plainly excessive railroad mileage now in existence. Unless a greater part of operating revenues are translated into net earnings, it is most likely that hundreds of millions of dollars more of fixed and equity capital in railroad enterprise will be wiped out at some future time, perhaps hastened by post-war difficulties.

"The present expansion in traffic furnishes a splendid opportunity to effect consolidation without significant displacement of existing workers. The need for more workers can presumably be balanced against the layoffs consolidation would otherwise entail. Will railroad labor display the statesmanship which will make possible the grasping of this opportunity? Will security holders keep their optimism within bounds sufficiently to make the readjustments now or ultimately take them in larger losses?"

From "Trusts and Estates" Magazine.

Illinois Central To Know Its Locomotives



A View of the New Locomotive Scale at Paducah, Ky., With the Cover Plates and Drip Pans Removed. The Sections of Dead Rail Are Painted White, While the Sections of Live Rail Are Unpainted

Installs highly accurate plate-fulcrum-type locomotive scale at Paducah, Ky., which is expected to reduce track stresses and mechanical repairs materially

IN order to obtain more accurate data than had heretofore been available, not only for steam and Diesel locomotives but also for other types of rolling stock, the Illinois Central has recently completed the installation of a plate-fulcrum-type wheel load scale at its shops in Paducah, Ky. This scale has 18 separate units, with a total weighing capacity of 900,000 lb. Each unit has a weighing capacity of 50,000 lb., and they are arranged for weighing all the individual wheel loads of any locomotive on the Illinois Central system with one spotting of the locomotive.

Proper Distribution of Weight Important

Former methods of weighing locomotives had failed to provide accurate data, particularly regarding individual wheel loads, although such data have been considered desirable for many years. With the greatly increased speed of both freight and passenger traffic, the proper distribution of locomotive weight on the individual wheels and axles is necessary if the locomotive is to deliver its full tractive effort without costly damage to the equipment and to the track and structures.

Various methods of securing weights of individual wheel or axle loads of locomotives have been used for years with indifferent success, and the first method em-

ployed, that of estimating by mathematical calculations, is still being used by some builders. The use of independent scale units for obtaining locomotive wheel loads in this country probably dates back 50 years or more, and various types of self-contained and pit-type scales were devised, each more or less unsuccessful.

In weighing locomotives, the entire locomotive may be considered as a live load which should be subdivided into sprung and unsprung weight. The approximate unsprung weight can be determined with reasonable accuracy by calculations, but experience has shown that variations of considerable amounts will occur in individual locomotives, not only in the weights on different axles, but also in the weights on the wheels on either end of the same axle, and that the distribution of these weights will change with the movement of the locomotive over the track if the springs are not properly adjusted.

From previous experience, it has been pretty well established that if the correct weights of the individual wheels and axles of a locomotive are to be obtained, it is necessary that all wheels be on exactly the same plane when the weighing is done; and, for the highest degree of accuracy, the entire locomotive must be scale-borne at one time. This premise led to the idea of using the plate-fulcrum type of scale construction, since, if the foundation and structural members of the scale are de-

signed with sufficient strength, all the live rail sections of each scale unit remain on the same plane, regardless of the amount of load on each scale.

Plate-Fulcrum Scale Rigid

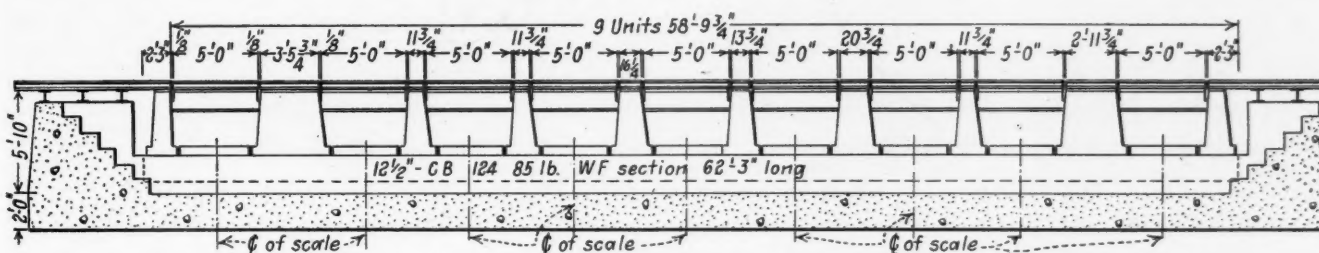
In its design and operation, the plate-fulcrum scale installed at Paducah does not differ from the conventional knife-edge type, except that plate fulcrum pivots replace the knife edges and, since the pivots are securely attached to the connecting levers, there is no relative movement of the parts when the load is applied or released. In fact, when loaded to capacity, the maximum depression or deflection of the weigh rail is less than 0.006 in. and the movement of the extreme end of the weigh beam between full load and no load is only 0.4 in. Thus, the locomotive, while being weighed, stands on the scale, with all parts in their natural positions, exactly as it would on an ordinary piece of track. Moreover, to insure that the wheels rest on the live rails without flange contact, small tapered contact lugs or guards were welded to the gage side of all the dead rails.

Although the individual parts and the scale as a whole are rigid and motionless, sensitivity is not sacrificed. Each of the 18 units has a capacity of 50,000 lb. and weights up to this magnitude can be read directly in

of the I-beams in the concrete below. After the bearing plates were adjusted, they were grouted in place through 3-in. holes previously drilled along the center line of the plates for that purpose. The foundation bolts for the scale bases were not fastened to the bearing plates; instead, they were fastened to the upper flanges of the I-beams in the foundation and project up through the bearing plates, thus allowing for the future adjustment of these plates if necessary.

As previously mentioned, the scale units are identical, but the live rails are separated by short sections of dead rail of various lengths, which are mounted on heavy steel arch castings. The spacing between the rail ends is approximately $\frac{1}{8}$ in. The lengths of dead rail were calculated from a study of locomotive diagrams so that the spacing of the live rails would fit all wheels of any locomotive on the Illinois Central system when properly spotted.

When the scale was installed, the ends of both the live and dead rail sections were hardened. After it had been in service for some time, a slight amount of secondary batter developed in the live rails. This was corrected by the installation of new scale rails hardened throughout their length. The use of unhardened rails is not desirable because of the tendency for the live and dead rails to flow and bind, requiring the use of a hack saw



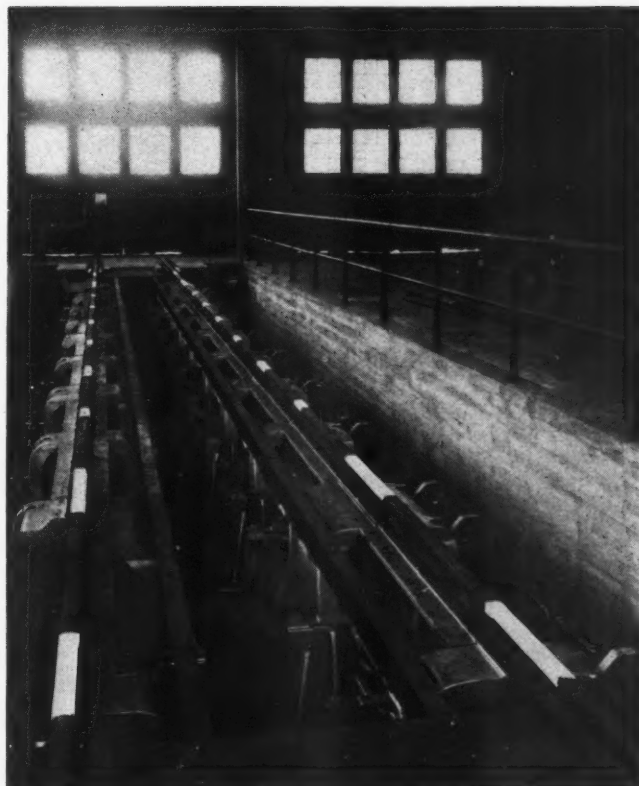
Elevation of Scale and Longitudinal Section Through Concrete Base, Showing the Spacing of Dead and Live Rails

20-lb. increments. In addition, because of the slight movement of the weighing beam, an interpolating pointer was provided to indicate when the scale is in balance, which permits the weight to be estimated to within 10 lb., an increment representing only 0.02 per cent of the capacity of each unit.

Details of Construction

The scales were installed in a pit at one end of the paint shop, a convenient location relatively free from vibrations or disturbances from outside sources. To insure against the possibility of any settlement or movement which might effect their accuracy, they were placed on a massive concrete foundation, heavily reinforced and supported on cedar piles. The foundation proper is 65 ft. 9 3/4 in. long and 8 ft. 6 in. wide, and the pit, which is 15 ft. 6 in. wide, extends beyond the scales at each end to provide a passageway under the track rails from one side of the pit to the other. Steps leading down into the pit were provided at all four corners. Four 14-in. wide-flanged I-beams were set in the concrete of the scale foundation, two under each rail, spaced 18 1/2 in. apart. The top flanges of the I-beams were set approximately 5 in. below the level of the foundation top.

To provide a smooth, accurate surface upon which to mount the scale bases, steel bearing plates 2 in. thick, with a machined surface, were placed and very carefully adjusted within limits of .0002 in. for height and cross level. The bearing plates were adjusted by four 3/4-in. cap screws in each plate which bear on the upper flanges



Another View of the New Scales, With the Cover Plates and Drip Pans Removed

every few weeks to keep the space between the rail ends open.

A checkered plate floor was laid between the rails of the scale pit. To further protect the scales, drip pans have been installed both outside the rails and between the rails for the full length of the scales. In addition, canvas hoods have been provided to cover the weigh beams of the individual scale units and protect them when not in use.

Operation of the Scales

In weighing locomotives, all wheel weights are taken three times. All wheels of the locomotive pass over a bumping plate before each set of weights are taken. The bumping plates, which are installed, one on each approach rail, near the end of the scale, consist of steel plates $3\frac{1}{2}$ in. wide, $\frac{3}{4}$ in. thick and 15 in. long, attached by a hinged arrangement to swing free of or lie on the ball of the rail.

RULES FOR OPERATION OF SCALES

Strict rules are provided for the operation of the scales to protect them from abuse and to prevent unauthorized or untrained persons from operating or repairing them. These rules follow:

1. All weighing shall be done under the supervision of the engineer of tests. Actual weighing shall be done only by a member of his organization.

2. All items of scale maintenance will be handled under the supervision of the office of the engineer of buildings.

3. Unauthorized persons shall not be allowed in the scale pits at any time.

4. No shop inspections, shop adjustments, or shop work of any kind shall be performed on the locomotive or other equipment while it is on the scale.

5. Equipment must be pushed or pulled on and off the scale and not moved under its own power.

6. Before moving a steam locomotive onto the scale, the following operations must be completed.

a. All frame wedges must be pulled down to the binders.

b. The tender buffer must have $\frac{1}{2}$ in. slack.

c. Brakes must be released.

d. The blower and air pumps must be shut off.

e. Cylinder cocks must be opened.

7. All wheels for a record of weights must pass over the bumping plates to adjust the spring rigging.

8. All equipment must be so spotted that all wheels are on separate scales.

9. All engines must be spotted on the scale weigh rails so that the crank pins are on the top eighths position to balance the main pistons.

10. If it is necessary to slip the drivers to obtain the top eighths position, the locomotive must be removed from the scale before doing so. The rails should be greased to permit the slipping of drivers.

11. All equipment shall be weighed in a loaded or normal working condition as follows:

STEAM LOCOMOTIVES

a. Full complement of equipment standard to the locomotive.

b. Two men in the cab.

c. Sand boxes full of sand.

d. Twelve-inch thick fire on grates.

e. Engine under full boiler pressure, with two full gages of water in the boiler.

f. Fire and water must be regulated to maintain them as nearly constant as possible.

DIESEL-ELECTRIC LOCOMOTIVES

a. Full complement of equipment standard to the locomotive.

b. Full engine crew in the cab.

c. Sand boxes full of sand; water and fuel tanks filled to a normal capacity.

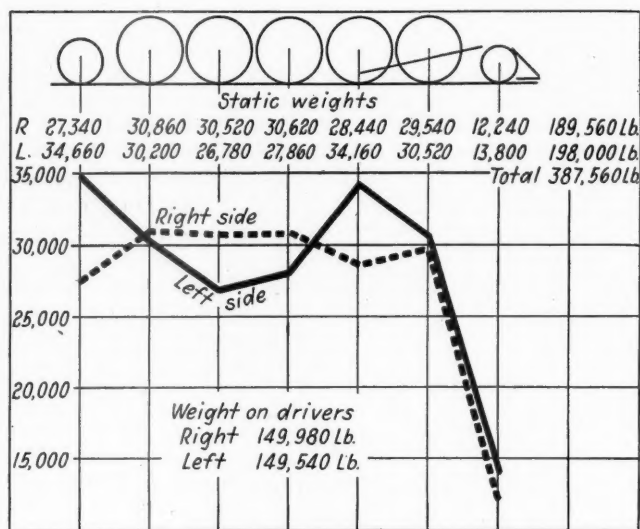
ELECTRIC LOCOMOTIVES

a. Full complement of equipment standard to the locomotive.

b. Full engine crew in the cab.

c. Sand boxes full of sand.

12. All weigh beams must be locked when the equip-



Graph of Wheel Weights of An Actual Locomotive

The weights, as plotted separately for the right and left sides, disclose that the distribution of weight on the left side is highly unfavorable, with a bad "reversal," and that the weight on the trailer wheel is much too large for a wheel of small diameter. The loading and distribution of weight on the right side approximates a desirable condition, with the possible exception that the weight on the pilot wheel might be slightly increased.

ment is being spotted on the scale and must be kept covered when not in use.

13. Release all beams and adjust to an approximate balance after the equipment has been placed.

14. Repeat the adjustment on all scales to a true balance and lock all beams before recording weights.

15. Read weights to the nearest 20 lb. graduation on the beams.

16. Keep the doors and windows closed on windy days while weighing is being done.

17. A permanent record, signed by the engineer of tests and his assistant, must be kept of individual wheel loads for each weighing operation. Published weights shall be given as rail loads, i. e., the sum of left and right wheel rail load for each axle, and shall be the average derived from three weighing operations.

18. Remove all equipment as soon as weights have been obtained.

19. Weighing operations are to be performed three times. The equipment is to be removed, passed over the bumping plates and reset on the scale between each operation.

20. A copy of these instructions must be placed under glass on the wall nearest the scale.

(Continued on page 650)

April—Perfect Shipping Month

Railroads, shippers and Department of Commerce cooperate in war on loss and damage to freight

THE perfect shipping and careful handling campaign that is being conducted by railroads and shippers throughout the United States this month hit full stride on the opening day, with indications that this year's efforts will be even more effective than those of previous years. Added stimulus has been given to the efforts of railroads and shippers to reduce loss and damage to freight this year by the pressing demands of the program of national defense.

As pointed out by Thomas E. Lyons, chief of the Transportation Division of the Bureau of Foreign and Domestic Commerce of the Department of Commerce, which is co-operating in the campaign, "efforts to improve methods of packing, marking and handling goods so that loss and damage claims in transportation may be reduced are particularly needed at the present time when the country is giving primary attention to speeding up the program of national defense. Safe delivery of national defense goods, ready for instant use, is absolutely essential if production of urgently-needed equipment is not to be delayed.

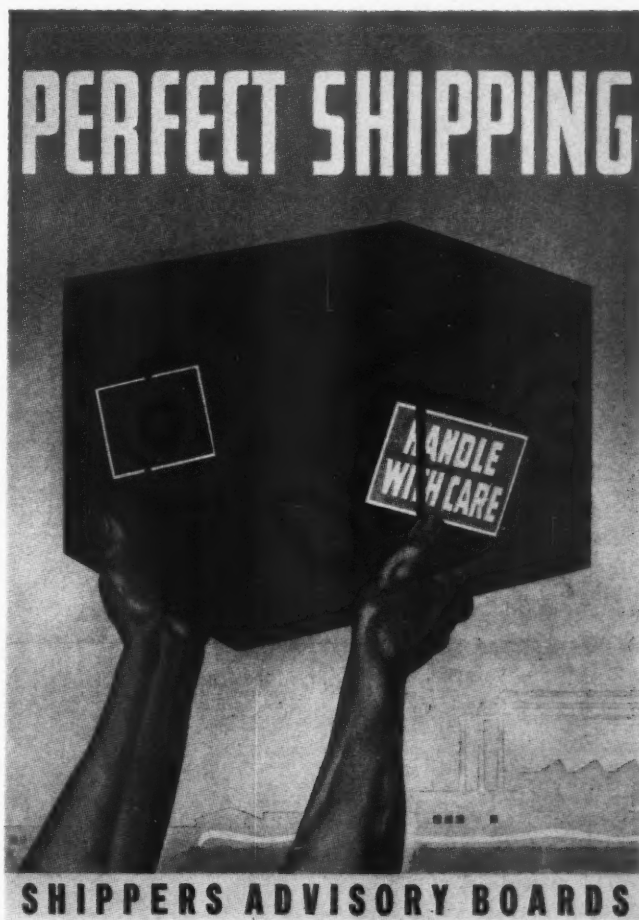
"Many delicate and easily-broken instruments, machines and machine parts are now being moved in large volume by rail, water and truck to plants engaged in national defense production. Breakage of articles like these not only may involve large monetary loss, but may also seriously retard the output of vitally-needed products such as airplanes and army and navy material.

"In addition to delaying the defense program, damage to these and other goods means replacement of lost materials and damaged or broken articles or parts, involving duplicate shipments, extra clerical work and handling, and the unnecessary utilization of additional car or truck space."

Advisory Boards Sponsor Campaign

The campaign is under the sponsorship of the National Association of Shippers Advisory Boards, with railroads and express companies co-operating. The practice of holding a campaign in April of each year was started in 1937 for the purpose of ascertaining and removing the causes contributing to loss and damage so that shipments may be sold to customers "at a profit" rather than to the railroads "at cost" and thus avert the large economic waste involved in loss and damage. Shippers are called upon to check their packing methods and to make certain that their goods are being delivered in good condition. Receivers of freight are encouraged to make a thorough check of all damaged merchandise, instead of merely filing a claim with the carrier without even ascertaining the cause of damage, so that the damage may be investigated and measures taken to avoid its repetition. Railroads are encouraged to study their operations with a view to further improving safe transportation.

W. J. Williamson, general traffic manager of Sears, Roebuck & Company, Chicago, is general chairman of the national management committee, which consists of the chairmen of Committees on Prevention of Loss and Damage of the 13 regional advisory boards. Co-operating with this committee are the individual rail-



The Campaign Is Symbolized by a Poster In Color

roads, express companies, the Association of American Railroads, the U. S. Department of Commerce, the National Industrial Traffic League, national trade associations, traffic clubs, chambers of commerce and other commercial organizations.

Williamson Outlines Importance of Campaign

The importance of reducing loss and damage to freight was outlined by Mr. Williamson at a luncheon meeting of the Traffic Club at Chicago on March 18 as follows: "If interest and enthusiasm count for anything, this year's Perfect Shipping Campaign should be far more productive than any preceding campaign. All persons are taking a greater and more effective interest in preventive measures. Everyone, from the president of industrial concerns and transportation companies all the way down the line to those in the shipping and receiving departments, is giving this subject more attention. There has already been an awakening on the part of business executives to the intangible losses they are suffering in their particular businesses through losses of unrecoverable amounts. The loss and damage claims filed against the railroads last year in the amount of \$21,000,000

comprise only a fraction of the loss suffered by American industry and it is an awakening to this consciousness that has enlisted the support of industrial leaders in our campaign.

"Our campaign this year is all the more important due to the tremendous stress that is being placed on our national defense program and the turning out of materials and supplies for the waging of war and defense. In view of this condition, it is most important that we safeguard the gains already made toward accomplishing our objectives of Perfect Shipping. At the close of the last World War the railroads were paying approximately \$120,000,000 a year for loss and damage claims and I sincerely hope that through the stress and strain of speeding up our national defense program we will protect and reserve the present position that has been gained through strenuous efforts.

"American industry and transportation can contribute much through this campaign to help in our national defense program. If every shipment went through in a perfect manner so that the products of industry reached the consumer in perfect condition, we will then have helped in the conserving of raw material that is so vitally needed for defense measures and we will also conserve the working hours of the people that they may concentrate on the problems of defense. Furthermore, the transportation companies, and particularly the railroads, will not find it necessary to move damaged shipments back to the manufacturer for reconditioning or handle the same shipment twice from point of origin to destination, resulting in increased car capacity for handling vital materials in our defense program. I believe that from a patriotic point of view, we should redouble our efforts this year toward making perfect shipping a reality.

"We are still a long way from our goal. I have visited various warehouses, shipping and receiving rooms and freight houses, etc., and note the continued lack of interest in perfect shipping that is contributing to losses of millions of dollars to industry and transportation.

"Just recently I noticed perfectly good containers marked fragile being tossed around on a railroad platform in a most careless and indifferent sort of manner. Here is a case where the manufacturer provides a good safe container, legibly marked and in perfect condition, but his entire efforts are nullified by the callous indifference of the freight handler of the transportation company. I am convinced from what I have personally observed that freight handlers in general have not yet had this message of careful handling brought home to them, in spite of our four previous campaigns. I hope that railroad management will see to it that the slogans of this campaign are brought forcefully to their attention and that the voca-film is shown to every employee on their systems. In fact, it would be well worth the effort and the expense if railroad management made it compulsory for every employee to attend at least one perfect shipping meeting during this campaign.

"I have noticed cars that were adequately braced and blocked to withstand the normal hazards in transportation, arrive at destination in a deplorable condition due to careless handling by switching and train crews. These men must be made to realize that their job is secure only in the event that their employer is successful in giving to the shipping public the kind of service they have a right to expect in transporting shipments safely to their destination. The losses suffered annually will prove in many instances to be the termites that gradually undermine strong institutions.

"I believe there is a great laxness on the part of railroad inspectors in permitting manufacturers to deliver

merchandise to carriers, packed in cartons that are loaded beyond their marked carrying capacity; in fact, I have observed quite a number of these recently.

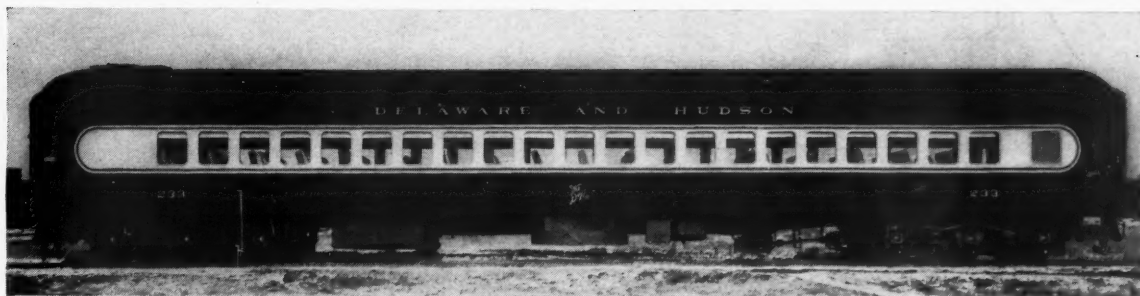
"The railroads have made very decided progress in the adoption of new designs of trucks with improved spring suspension for railroad cars, which give easier riding to shipments and also eliminate much of the vibrations which resulted from the attaining of high speeds in freight train service.

"Equipment manufacturers have built about a dozen new types of trucks that have met all the specifications of the Mechanical division of the Association of American Railroads. There is also a definite trend toward equipping new cars with cushion underframes or high-capacity draft gears to take up much of the end shocks that cars receive in yard and road service. The number of these improved trucks and devices installed on cars up to the present time have been rather low; however, there is a definite effort being made along these lines. I have been disappointed that more of the new cars purchased were not equipped with this modern type of construction and I hope that the carriers will find it possible in future orders to increase the use of these new features gradually in the equipment they purchase.

"If we can get the receiving departments of business houses to report every shipment that they receive in an unsatisfactory condition to the shipper instead of merely filing a claim with the transportation company to recover the loss, we will be doing the shipper and ourselves incalculable good. There are literally thousands of shippers in this country that are under the impression that the packages they use are thoroughly adequate to carry their merchandise safely to destination and they assume this position only because the receivers have not called their attention to instances of inadequate or insufficient packing or make known to them improvements that could be made in their packing.

"If we could institute this handling on a national basis to cover each damaged shipment, I am sure that it would be only a short while before the loss and damage account now being borne by American industry and transportation companies would be reduced to an infinitesimal amount. The man in charge of your receiving department is holding the key to this problem. If we can inaugurate a report system for each damaged shipment along the lines I have mentioned, it will save you many hours time and thousands of dollars by helping manufacturers and shippers provide more adequate packing. The oft-repeated adage "familiarity breeds contempt" certainly applies to the man actually handling freight day in and day out, who seems to have become calloused and fails to realize the importance of perfect shipping. This message must be driven home to him."

AN ANGRY BULL MOOSE was an uninvited "dead-head" passenger on the Canadian National's Prince Rupert, B. C., line recently. Engineer W. J. Thompson was running a "fish extra" between Endako and Smithers when his fireman said he thought he saw a shadow in front of the engine. "Neither of us definitely saw anything on the track, nor did we feel anything hit. However, the engine was creating a snow plume, in itself not unusual." After running three-quarters of a mile, still accompanied by the "plume," Thompson stopped and found he had scooped up a big bull moose. The animal was wedged between the draw bar head and the pilot. "And was he mad," Thompson said. The animal's legs were in the air and "he was shaking his head like fury." Thompson backed his locomotive and freed the moose, who gathered himself together, found he was uninjured and loped up a sidehill "as though nothing had happened and not even thanking us for the ride."



The Rebuilt Coaches Have the Exterior Styling Previously Adopted by the D. & H.

D. & H. Continues Modernization of Passenger Coaches

To meet the demand for better smoking accommodations, the latest coaches have a section with reclining seats for 22 persons

TWO conventional steel coaches with small Pullman-type smoking compartments were modernized last year* by the Delaware & Hudson in the company's shops at Colonie, N. Y., under the direction of G. W. Ditmore, master car builder. These cars have proved so satisfactory that it has been decided to continue this work on additional main line equipment of similar construction. Last month, two more coaches, Nos. 233 and 234, were completely modernized at the Colonie shops.

* A description of these coaches appeared in the July 13, 1940, issue of the *Railway Age*.

These cars were equipped originally with walkover seats providing accommodations for 90 persons, including seats for 24 in the 20-ft. smoking section. As reconstructed, each car has a seating capacity of 74, the main passenger section seating 52 and the smoking section 22, with a distance of 41 in. between seat centers to afford ample leg room. The seats are the Heywood-Wakefield double reclining, rotating type having cushions and arm rests of sponge rubber and spring cushioned backs. In the smoking section, the backs of the seats are equipped with ash receptacles. The main passenger



The Smoking Section in the Foreground Is Separated from the Main Passenger Section by an Aluminum and Glass Partition

and smoking sections are separated by an aluminum partition in which a large safti-glass is set in a die frame on either side of the aisle to give the passengers and the train crew a full view of the interior from either end of the car.

The interior furnishings of each car were completely removed, the superstructure and underframe repaired and the Chanarch flooring renewed. The double wood-frame windows were replaced with Adlake hermetically sealed, double-glazed breather sash. The original wall panels and headlining were removed and Masonite industrial tempered Presdwood was applied. The entire car was insulated with 2-in. and 1½-in. Stonefelt. The deck-sash openings were sealed with steel plates and the space formerly occupied by the clerestory has been utilized for the Pyle-National Multi-Vent system of draft-less ventilation.

The air-conditioning apparatus is electro-mechanical of seven tons capacity. Electrical equipment includes a G. E. 20-kw. generator driven by a Safety V-belt-and-gear drive; and a 50-cell, 64-volt Edison type G18H battery. Two battery compartments for 25 cells are located one on each side of the car. The motor driving the compressor is of the a.c.-d.c. type. Auxiliary fans have been installed for use in case of failure of the air-conditioning system.

Ample illumination is secured through two rows of ceiling lights extending the full length of the car. One light is located over each seat, the light unit having a prismatic lens with a 40-watt lamp and a 6-watt blue lamp for night use.

The floor heat system has Vapor-Vulcan copper-bearing-steel fin radiation. All temperatures are regulated by correlative control. Other features include large satin-finish aluminum basket racks running the length of the car supplemented by a spacious luggage compartment at one end of the car for heavy and bulky baggage. The riding qualities were improved through the application of Fabreeka sound-deadening pads to the truck springs and draft rigging. Cenco side-stem buffers were applied to cushion the shocks and minimize chatter and vibration.

The exterior paint treatment is consistent with the D. & H. standard recently adopted for modern equipment. The finish is a semi-dark green with gold lettering, a panel of light gray with a narrow orange stripe outlining the window area.

As in the cars modernized previously, the color scheme of the interior was given careful consideration to assure a pleasing atmosphere. The predominating colors are light cream and various tones of blue gray accented with aluminum, red and black gloss trim. The following is an outline of the interior paint treatment of coach No. 233:

Multi-Vent panel and Snap-on moulding	Light cream
Light panel, basket-rack panel and curtain-box moulding center stripe	Aluminum
Curved headlining, panel over window	Pale blue gray
Pier panels	Medium blue gray
Wainscoting, pipe grilles	Dark blue gray
Curtain-box moulding	Brick red
Window sills	Black gloss
Partitions, bulkheads	Silver opalescent

The seats in the smoking section are upholstered in imitation leather of cranberry color; the seats in the main passenger section are in frieze, the three front and rear seats being mulberry and the intervening seats a contrasting silvery gray. The backs of all seats have beige-colored head rests. The Pantasote window curtains are faced with a navy blue fabric. The Tucolith flooring is covered with Armstrong brown jaspé linoleum having two 1½-in. mahogany-colored stripes on each side of the aisle.

At each end of the car, respectively, is a men's and

women's lavatory the walls and wainscoting of which are Marlite finished in light ivory and powder blue with turquoise rubber-tile floor covering. All end and side vestibule doors, lavatory doors, water coolers and other equipment were replaced with improved types. The hardware fixtures are chrome-plate satin finish. Vestibule platforms are covered with blue checkered rubber tile and all handholds are of stainless steel. The same decorating plan was followed in coach No. 234 excepting that the arch deck is a light cream and the light panel is a pale blue gray.

Preco Air-Circulating Fan

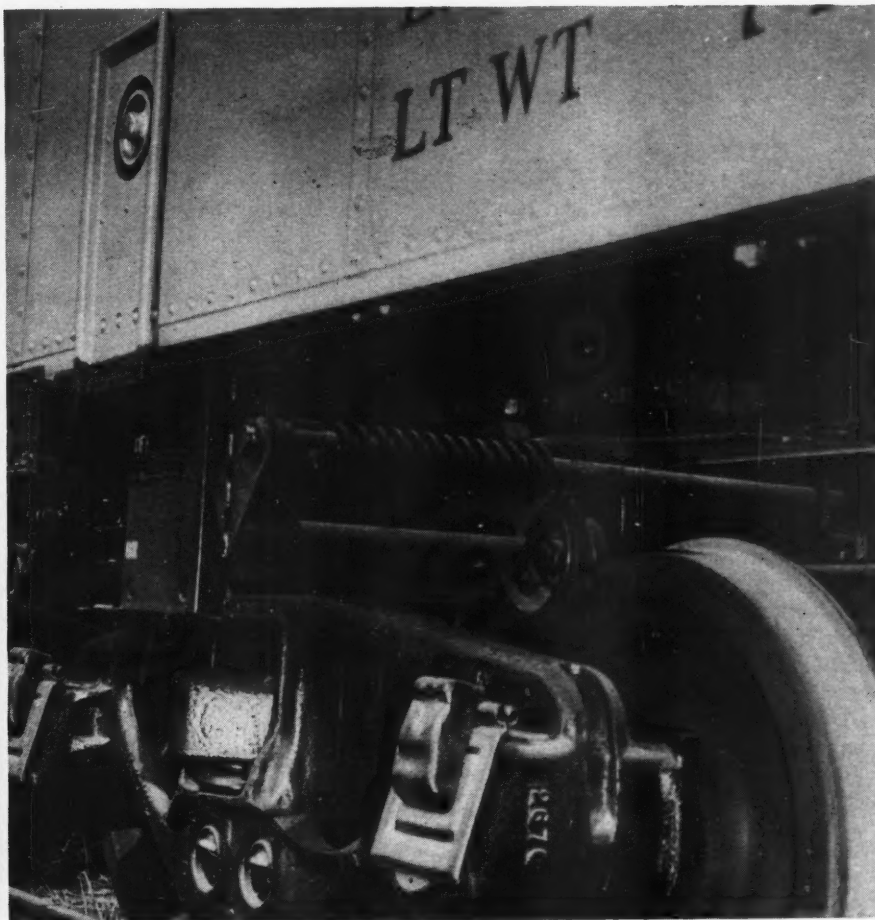
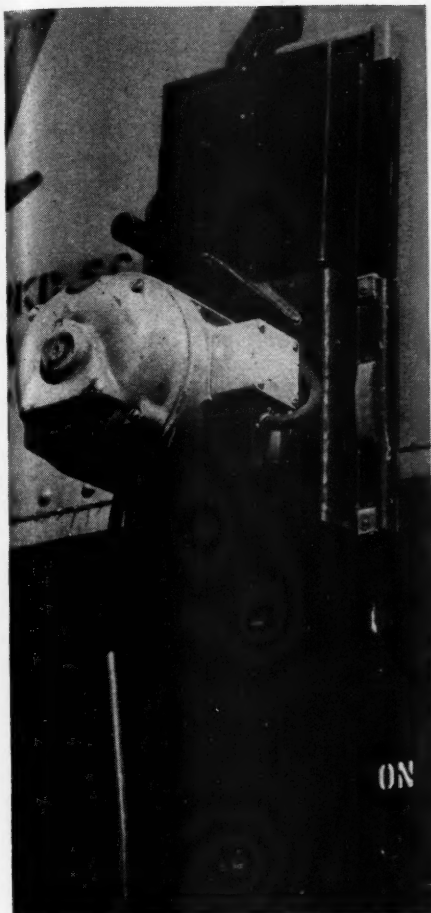
PRECO air-circulating fan equipment, developed by the Pacific Railway Equipment Company, Los Angeles, Cal., and now applied to several hundred refrigerator cars, consists of a floor-mounted blower in each end of the car, belt-driven from a car wheel and arranged to give forced circulation of air from under the floor racks, up through the ice bunkers and along the top of the car, from which it filters down through the load to be cooled. This is essentially the reverse of the normal circulation which has a tendency to leave a layer of somewhat warmer air at the top of the car.

In test shipments, it is reported that California oranges loaded at 40 deg. F. in conventional cars, two boxes high on end, arrived at New York with the top layer of fruit at 50 to 55 deg. F. and the air temperature at the top of the car several degrees higher. With forced-air circulation on the other hand, oranges loaded three boxes high at 40 deg. F. arrived at destination with the top layer fruit at 41 and 42 deg. F., with initial icing only. Similar results have been secured with avocados and figs, two highly perishable products, loaded to a height within eight inches of the car ceiling.

It is claimed, therefore, that Preco forced-air circulation removes the limitations on load height, and revenue ton mileage for fan cars may be increased by as much as 50 to 60 per cent for certain commodities and 20 to 30 per cent for others. Assuming a 25-per cent increase in revenue load, four fan cars will haul the load of five conventional refrigerators and eliminate the equivalent round-trip mileage of one empty car. The fan installation costs approximately seven per cent of the new car price and is said to create useful loading space equivalent



Preco Air-Circulating Fan Installation in One End of a Refrigerator Car—Floor Rack Raised on One Side



Left: Stationary Precooling Electric Motor Attached to the Preco Fan Drive Shaft. Right: How the Fan Drive Is Taken from One of the Truck Wheels

in investment to 25 per cent of the new car value. The attendant increase in efficiency of refrigerated transport apparently justifies the consideration of freight rate adjustments to stimulate heavier loading.

Tests indicate that forced-air circulation improves both heater and ventilation protective service through the elimination of excessive temperature spread between the top and bottom of the conventional car. Also, the fan interferes in no way with the application of either body or top ice. More than 200 shipments in fan-equipped cars, involving some 18 types of perishable commodities, are said to have established not only the superior refrigeration service but also the simplicity, economy and reliability of the fan equipment.

A further significant improvement is the opportunity afforded the shipper to precool the load prior to departure and at minimum expense. A suitable electric motor is simply attached to the fan drive unit on the side of the car without requiring access to the load, and the precooling continues with bunker ice as a refrigerant until the regular departure time for the car. If the loading of the car be late, no hold-over is necessary to complete the cooling because the car fans operate in transit and continue the cooling process. With conventional methods, a satisfactory precooling job must be done prior to departure, whereas, with the fans operating in transit, the "precooling" continues to destination. For certain commodities, no precooling prior to departure is needed, as the fans operating in transit provide sufficiently rapid reduction in temperature. At 60 miles per hour the fan speed corresponds to approximately 2000 cu. ft. per min. air flow through each bunker.

The Preco fan installation is adaptable to existing cars



Three-Stack Load of Oranges in Preco-Equipped Refrigerator Car

as well as new equipment and consists of two multiple blower units installed on the floor, one in each end of the car, near the bulkheads, driven by a car wheel. The fans are of the radial blade type and the housing unit is so designed that air is forced up through the ice bunkers and out over the load. This preferred flow direction is maintained for either direction of car travel, without reversing mechanism, solely by construction of the fan housing. In addition, the unit allows natural circulation to establish freely whenever the car is not moving.

The fan unit is built to the height of the floor rack so that when the racks are down to receive loading, the fan-housing cover is flush with the upper surface of the floor rack. The blower unit comprises seven radial-type blowers on a common shaft mounted in sealed ball bearings. The shaft extends through an air seal in the car wall to a V-pulley and belt which at its lower end engages a pulley on the driving shaft under the car. The outside drive consists of the drive shaft, also in sealed ball bearings, enclosed in its mounting tube which is hinged freely from the underside of the car. A helical spring applies force to the drive-shaft tube at a point such that proper belt tension and correct pressure of the rubber drive tire on the tread of the car wheel are maintained. The location of the drive assembly, the contour of the tire, and the flexibility of the mounting provide for all normal movement of the truck relative to the car body. The drive system is mounted entirely on the body of the car and interferes in no way with normal wheel and truck servicing operations.

The entire fan-and-drive assembly is designed to meet

the severe conditions of freight operation. The bearings are all of the anti-friction type, generously over-size, sealed, and lubricated for life. The drive mounting is substantial and consistent in design with other freight car parts, and conforms to clearance requirements. The V-belt and drive wheel have an estimated service life of approximately three years and are readily replaceable. As seen in one of the illustrations, the V-belt is completely enclosed by the car wall and a locked cover, which provides not only protection but also serves as a key member in an interlocking assembly arranged to prevent pilferage. Attached to the outer car wall is the mounting plate provided for attachment of the precooling motor.

Service experience with these built-in fans has been accumulated over a period of three years by the Santa Fe Refrigerator Despatch, Pacific Fruit Express, Fruit Growers Express, and Merchants Despatch Transportation Company. The Atchison, Topeka & Santa Fe, with 100 fan-equipped cars in service, has conducted an extensive test program to establish the merits of forced circulation, check the mechanical performance of the equipment, and determine shipper reaction. As a result of this investigation, the Santa Fe is installing fans in the current program of refrigerator car rebuilding. The Pacific Fruit Express Company, in a concurrent investigation of forced air circulation in cars, has launched a similar program of installation of fans of this same type. These cars, added to the Santa Fe equipment, will make a total of approximately 1,200 Preco fan-equipped cars available for the 1941 summer shipping season.

Illinois Central to Know Its Locomotives

(Continued from page 644)

All locomotives of the Illinois Central are now weighed on the scales after they are overhauled in the shops at Paducah, and if the weight distribution is not satisfactory, they are sent back for adjustment and again reweighed before being placed in service. Studies are now being made to determine the best distribution of driver loadings to provide the least possible wear and tear on the track. In general, because of the dynamic augment, which applies mostly to the main drivers, these wheels should carry no excessive static load. In addition, it is important that pony trucks and trailers are not overloaded. These wheels are generally smaller in diameter and because of that, if heavily loaded, are apt to overstress the rail at the point of contact. The smaller the wheel, the less load it can carry safely. An example of wheel loads is shown in one of the accompanying illustrations, which shows improper and good load distribution. This method of loading is said to introduce and relieve the stress gradually and to avoid a reversal of stress at any point under the locomotive.

The gradual introduction of stress is considered important. At a speed of 90 miles per hour, for example, even assuming a distribution of the stresses within a rail before and behind the point of loading of 10 ft., the application of a load closely approximates the *rate of change of stress* produced by a hammer blow. While other factors, such as the hardness or modulus of the steel in the rail and the wheel or locomotive tire, the size of the wheel and the speed all enter into the problem, in most cases, with existing equipment, little can be done to alter any of these factors, but the weights can be properly adjusted to prevent any excessive load on one wheel

and to provide a slight "run-off" for the introduction and release of the driver loads. Increasing the size of the rail, except for the fact that it lessens the effect of minor irregularities in the track due to a greater girder strength, is not a solution and does not lessen to any appreciable extent damage caused by improperly balanced equipment.

The accurate weighing and proper adjustment of locomotive wheel weights are made to prevent a large reversal of the weights on successive drivers, such as is shown in the accompanying illustration for the wheels on the left side.

In addition, reciprocating parts of locomotives are now made of light alloy steels which greatly reduce the weight of such parts, permitting lighter counterbalance weights and greatly reducing the dynamic augment on the rail. These improvements in proper adjustment of wheel loads and lighter reciprocating parts are said to make the locomotive ride easier, nose and sway less, and consequently knock the track out of line less, and reduce general track maintenance for both line and surface. Reaction on the mechanical equipment is also reduced, resulting in less breakage of springs and spring hangers, less probability of broken or cracked frames and a reduced number of hot boxes.

When the scale was first placed in service, many variations in wheel weights were found. In some cases loads on wheels on the same axle varied more than 5,000 lb., and in other cases "reversals" in the weights of successive drivers similar to that shown in the accompanying illustration, were found. Such "reversals" are considered very ruinous to the rail, especially at the high speeds prevailing today, and cause a large reversal of stress in the rail.

The Illinois Central has reason to believe that the construction of this scale, which was furnished and erected by Fairbanks, Morse & Company, Chicago, will be amply justified by reduced damage and reduced maintenance to both the track and mechanical equipment.

International Midget
Shop Mules in Freight
Station Service



Railroads Report Equipment for Handling Material

Survey shows great difference in degree of mechanization—N. Y. C.
leads in number of units—Hand trucking still plentiful

WITH reports from 118 railroads and terminal companies operating 200,000 miles of railroads in the United States and Canada, the *Railway Age* has compiled statistics which, while necessarily incomplete because of the impossibility of obtaining absolutely complete information for the entire country, throw light on the extent to which the railroads are motorized and mechanized for handling materials in their stations, storehouses and shops and other non-revenue work requiring the transfer of railway employees and materials.

The study extended to vehicles for handling mail, baggage and freight at terminals but not to vehicles for hire, equipment on rails and equipment attached to buildings. As in 1932, when this paper's first summary of material handling equipment was compiled, some roads reported the equipment used in some departments and not in others. Four reports last year contained no storehouse data, 6 no shop data, 13 reports had no track department data and 18 contained no freight and passenger station equipment. No information was furnished by the Pennsylvania; the Atchison, Topeka & Santa Fe; the St. Louis Southwestern; and the Texas & Pacific, the figures for these roads being limited to those obtained in 1931 with the exception of the Santa Fe's highway equipment. Most of the railroads, including the Canadian Pacific, however, reported detailed information and many roads itemized their equipment at special locations.

Nearly 225,000 Vehicles

A total of 224,350 pieces of off-rail towing and trucking equipment were reported by the 118 railroads and terminal companies included in this survey. This total includes 63 motor buses for railroad employees and 415 passenger automobiles, exclusive of hundreds of employee-owned automobiles used in railway work. It also includes 1,596 auto trucks, tractors and trailers for transporting railway material on the public highways. The extent to which this is an understatement of the highway equipment owned by the railroads for non-revenue service is indicated by the statistics of the Inter-

state Commerce Commission which show that the Class I railroads of the United States had 1,713 auto trucks, exclusive of passenger automobiles, in non-revenue operations on December 31, 1938.

The equipment also includes 3,558 self-propelled industrial tractors, and other self-propelled platform equip-

Off-Rail Towing and Trucking Equipment in Non-Revenue Railway Service in 1940*

	Stores	Shops	Way	Stations	Misc.	Total
1. Motor buses	1	14	14	29	5	63
2. Automobiles	28	12	118	187	71	416
3. Highway trucks	604	146	570	229	47	1,596
4. Total (1, 2 and 3) ..	633	172	702	445	123	2,075
5. Gas tractors	461	293	24	317	1	1,096
6. Gas tractors with crane	131	169	..	22	1	323
7. Gas tractors with crawlers	19	14	54	14	1	102
8. Electric tractors	24	35	..	510	6	575
9. Electric crane trucks ..	128	387	..	17	2	534
10. Motorized lift trucks ..	224	174	1	107	5	511
11. Electric warehouse trucks	73	72	..	80	18	243
12. Electric baggage trucks	4	20	..	139	11	174
13. Total (5 to 12, inclusive)	1,064	1,164	79	1,206	45	3,558
14. Hand lift trucks	580	93	3	386	3	1,065
15. Total (4, 13 and 14) ..	2,277	1,429	784	2,037	171	6,698
16. Tractor trailers, flat... 8,081	2,262	8	23,015	184	33,550	
17. Tractor trailers, box... 2,410	475	3	252	..	3,140	
18. Tractor trailers, special	2,559	390	..	403	..	3,352
19. Total (16, 17 and 18) ..	13,050	3,127	11	23,670	184	40,042
20. Skids, flat	30,560	2,337	..	1,868	67	34,832
21. Skids, box	28,619	1,575	..	3	..	30,197
22. Skids, special	2,870	370	..	219	..	3,419
23. Total (20, 21 and 22) ..	62,049	4,242	..	2,090	67	68,448
24. Baggage trucks—hand..	265	321	6	24,219	5	24,816
25. Wagons—3 wheels and over	1,025	4,234	30	14,483	64	19,836
26. Hand push trucks—2 wheel	3,284	7,602	53	49,522	281	60,742
27. Other equipment	776	1,047	14	1,961	1	3,799
28. Total (24 to 27, inclusive) ..	5,350	13,204	103	90,185	351	109,193
29. Total (19, 23 and 28)	80,449	20,573	114	115,945	602	217,683
30. Grand Total (15 and 29)	82,726	22,002	898	117,982	773	224,381

* As reported by 118 railroads and terminal companies excluding Railway Express Agency.

ment, consisting of 1,096 gasoline engine-driven tractors without cranes or crawlers, 323 gas engine tractors with cranes, 402 gasoline or Diesel tractors with crawler treads, 575 electric tractors, 534 electric or gas-electric crane trucks, 511 electric or gas-electric lift trucks, 246

electric warehouse trucks with low wheels and 174 electric baggage and mail trucks. In addition, the railroads reported 1,065 manually-operated jack lift trucks, which bring the total mechanized trucking equipment reported to 6,698 units.

Tractor trailers reported numbered 40,042, consisting of 33,550 flat trailers, 3,140 box body trailers and 3,352

Tractors, Lift Trucks, Crane Trucks and Motorized Baggage and Warehouse Trucks

	Stores	Shops	Way	Stations	Total
Alton	2	10	..	..	12
A. T. & S. F.	63*	32*	..	8*	103*
A. C. L.	9	2	..	6	17
B. & O.	34	77	..	15	126
B. & O. C. T.	1	3	..	4	8
B. & L. E.	6	12	..	..	18
B. & Me.	17*	12*	..	71*	100*
C. P. R. Sys.	15	73	11	2	101
C. Vt.	2	4	..	..	6
C. of Ga.	6	1	..	27	34
C. of N. J.	10	16	..	34	60
C. & O.	60	29	3	19	111
C. & E. I.	4	..	..	3	7
C. & I. M.	..	2	..	..	2
C. & N. W.	13	24	3	1	41
C. & W. I.	..	1	..	8	9
C. B. & O.	78	29	..	38	145
C. G. W.	4	1	2	..	7
C. M. St. P. & P.	127	..	..	22	149
C. R. I. & P.	21	23	..	..	44
Chi. Union Sta.	..	1	..	36	37
Cin. Union Sta.	3	4	..	14	21
Clinch.	..	2	..	..	2
C. & S.	3	..	..	..	3
D. & H.	2	14	..	..	16
D. L. & W.	8	27	..	37	72
Denver Depot	..	..	..	7	7
D. & R. G. W.	9	9	9	..	27
D. & T. S. L.	..	1	..	..	1
Det. Term.	..	1	..	..	1
D. T. & I.	..	12	..	..	12
D. M. & I. R.	2	2	..	..	4
E. J. & E.	13	2	..	..	15
Erie	8	39	..	9	56
F. E. C.	2	3	..	..	5
Ft. W. & D. C.	1	4	..	2	7
Grand Trunk	3	12	..	2	17
G. N.	32	18	..	30	80
G. B. & W.	1	..	..	1	2
G. M. & O.	2	..	..	..	2
I. C.	63	24	2	28	117
Indpls. Union	..	..	..	3	3
I. G. N.	18	15	..	..	33
Jacksonville Term.	..	..	..	22	22
K. C. T.	..	4	..	44	48
L. S. & I.	..	1	..	..	1
L. V.	3	28	..	5	36
L. & N.	14	37	..	21	72
Me. C. & Port. Term.	3	5	2	26	36
Memphis Depot	..	..	..	3	3
M. & St. L.	3	2	..	..	5
Soo	11	2	..	1	14

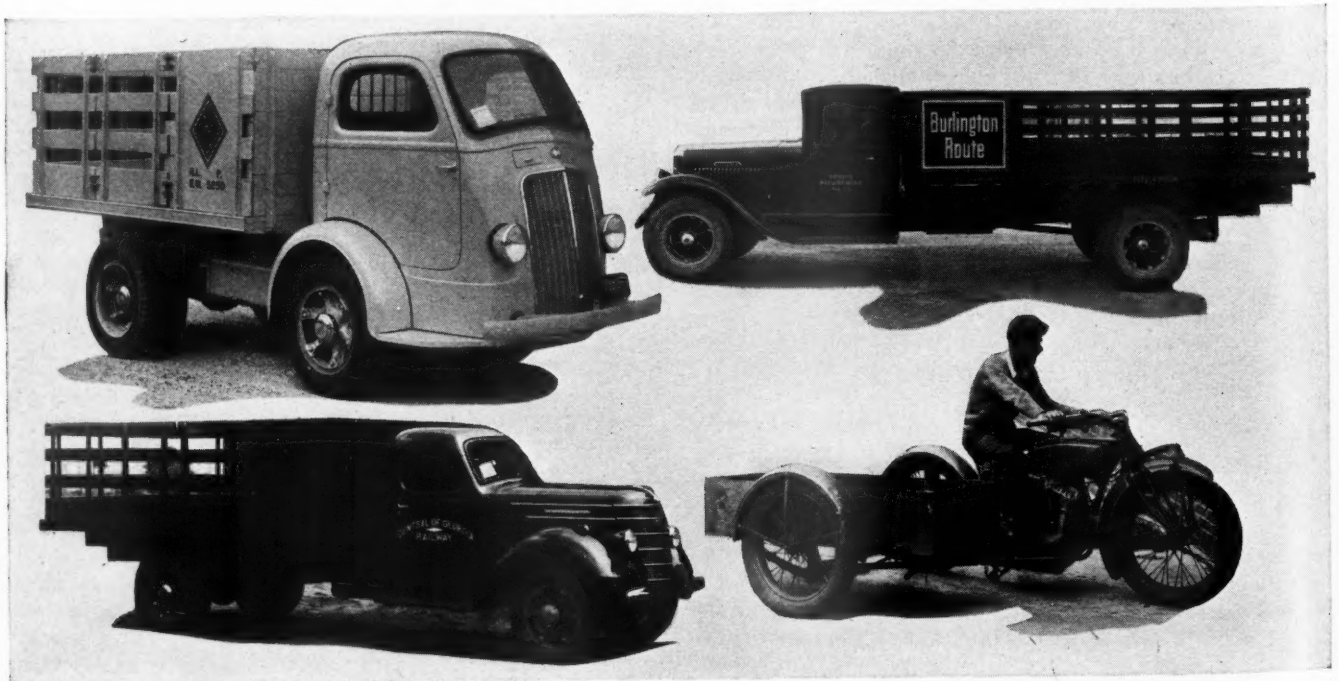
	Stores	Shops	Way	Stations	Total
Mononga.	..	1	..	..	1
M-K-T	14	5	..	..	19
Mo. Pac.	34	107	1	23	165
N. Y. C. Sys.	91	176	6	208	481
Shops	..	94	..	..	94
B. & A.	5	3	..	..	8
Lines East	27	54	3	69	153
Lines West	25	..	2	51	78
Mich. Cent.	11	..	1	27	39
C. C. C. & St. L.	16	11	..	1	28
Cleve. Term.	..	8	..	9	17
P. & L. E.	7	6	..	51	64
N. Y. C. & St. L.	7	8	..	1	16
N. Y. N. H. & H.	9	50	2	156	217
N. Y. O. & W.	..	2	..	..	2
N. & W.	1	82	..	26	109
N. P.	14	7	10	1	32
Penna.	..	36*	..	159*	195*
Pere Mar.	7	1	..	2	10
P. & P. U.	..	2	1	..	3
Reading	52	20	1	24	97
R. F. & P.	1	..	..	1	1
Rutland	3	1	..	1	5
St. L.-S. W.	2*	5*	1*	..	8*
St. Paul Depot	..	..	..	8	8
Salt Lake Depot	..	..	..	1	1
S. A. L.	1	1	..	5	7
Sou.	9	10	4	4	27
S. P.-P. Sys.	27	1	20	30	78
S. P. & S.	..	..	1	..	1
T. & N. O.	11	2	..	7	20
T. of St. L.	1	3	..	12	16
T. & P.	5*	5*	..	..	10*
Union Pacific	95	12	..	..	107
Union of Dallas	..	..	..	6	6
Va.	1	..	..	..	1
W. Md.	2	..	..	29	31
Wes. Pac.	1	3	..	1	5
W. & L. E.	..	4	..	..	4
Total	1,064	1,164	79	1,251	3,558

* Year 1931.

trailers of other types. Skids, boxes, containers, portable platforms and pallets for use with lift trucks totaled 68,448, consisting of 34,832 flat skids, 30,197 box skids and 3,419 skids of other types. In addition, the railroads reported 24,816 baggage trucks, 60,742 two-wheeled hand push trucks, and 23,635 wagons and other vehicles.

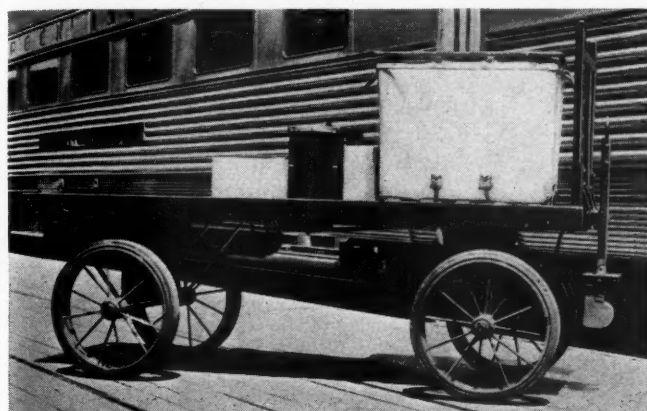
Equipment reported included 33 motorcycles, 553 rebo boards, 440 dollies and 195 mail carts, also 2 tobacco wagons, 8 electric pulp pilers, 230 ft. of roller conveyors, 2 mechanical lumber carriers of 15,000 lb. capacity each, 5 electric escalators, 3 roll-paper loading machines, 6 scenery trucks, 36 three-wheel barrows, a revolator and several fire trucks and ambulances.

The information reported includes 400 more automobiles and trucks than were reported in 1931, 229 more



The Railroads Have Overcome Prejudices to Equipment for Street Service

industrial tractors, 74 more lift trucks, and 835 more self-propelled units of all kinds. The list also includes 638 more jack lift trucks—an increase of approximately 150 per cent over those reported in 1931. The lists contain 3,341 more tractor trailers and 35,212 more lift truck skids than were reported in 1931. As reported, 117,982 units were used by the freight department,



French & Hecht Roller Bearing Wheels with Demountable Rubber Tires on a Baggage and Express Wagon

82,726 units by the store forces and 22,002 units are assigned to car and locomotive shops.

Large Number of Auto Trucks Used

Of the highway equipment reported, 702 automobiles and auto trucks are operated by the maintenance of way and engineering forces, 633 by the store forces, 445 by employees of the transportation department, and 172 by mechanical department forces. The store departments also reported 461 of the gasoline tractors, while 317 are assigned to the freight and passenger departments, and 293 to the shop forces. Of the electric tractors reported, 510 are in freight and passenger stations. In the case of electric crane trucks and gasoline tractors with cranes attached, the shops and roundhouses accounted for 556 units, as compared with 259 units assigned to store forces and 39 reported by station forces. Of the motorized lift

Electric Lift Trucks

	Stores	Shops	Way	Stations	Total
B. & O.	8	7	..	..	19
B. & Me.	4*	2*	..	40*	46*
C. P. R. Sys.	6	6	..	..	12
C. of Ga.	2	..	..	23	25
C. of N. J.	3	3	..	4	10
C. & O.	10	7	..	..	17
C. & N. W.	2	1	..	..	3
C. B. & Q.	5	4	..	..	9
C. G. W. ....	..	1	..	..	1
C. M. St. P. & P.	47	..	..	..	47
C. R. I. & P.	1	..	..	..	1
D. & H. ....	..	1	..	..	1
D. L. & W.	3	12	..	24	39
D. M. & I. R.	1	..	..	..	1
E. J. & E.	2	..	..	..	2
Erie	3	7	..	..	10
F. E. C.	1	..	..	..	1
Grand Trunk	10	..	..	..	10
G. N.	1	..	..	..	1
G. B. & W.	18	3	..	..	21
I. C.	1	2	..	..	3
I-G. N.	1	4	..	..	5
L. V.	4	8	..	..	12
L. & N. ....	..	..	..	..	1
Me. C. & Port. Term. ....	..	..	..	1	1
Soo.	10	..	..	..	10
Mo. Pac.	16	15	..	..	31
N. Y. C. Sys.	29	47	1	2	79
Shops ....	..	39	..	..	39
B. & A. ....	..	..	..	..	1
Lines East	11	6	1	1	19
Lines West	10	..	..	..	10
Mich. Cent.	1	..	..	..	1
C. C. C. & St. L.	4	2	..	..	6
Clev. Term. ....	..	2	..	..	2
P. & L. E.	2	..	..	1	3
N. Y. N. H. & H.	2	8	..	..	10
N. & W.	1	9	..	..	10
N. P.	4	..	..	..	4
Penna. ....	..	25*	..	..	25*
Reading	3	..	..	..	3
S. A. L. ....	..	..	..	3	3
T. & P.	1*	..	..	..	1*
Union Pacific	24	2	..	..	26
W. Md. ....	..	..	..	10	10
Wes. Pac. ....	..	..	..	1	1
Total	224	174	1	112	511

* Year 1931.

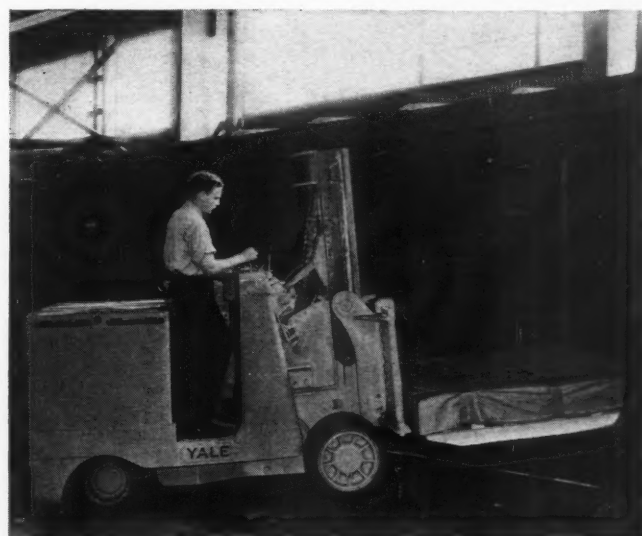
in charge of store departments, 386 are reported by station forces and 93 by shop forces. Of the total number of automobiles, tractors and other mechanical equipment reported, 2,277 units are used by store department forces, 2,037 units are assigned to forces of the transportation

Electric Baggage Trucks—High Wheeled

	Stores	Shops	Way	Stations	Total
A. C. L.	1	..	..	1
B. & O.	1	..	..	..	1
B. & O. C. T.	1	1
B. & L. E.	1	..	..	..	1
C. P. R. Sys.	6	..	1	7
C. of N. J.	1	2	..	10	13
C. & W. L.	5	5
Chi. Union Sta.	8	8
D. L. & W.	7	7
G. N.	2	2
K. C. T.	15	15
N. Y. C. Sys.	11	..	80	91
Shops	4	..	..	4
B. & A.
Lines East	7	..	63	70
Lines West	3	3
Mich. Cent.	6	6
C. C. C. & St. L.
Clev. Term.
P. & L. E.	8	8
N. Y. N. H. & H.	10	10
Reading	9	9
Rutland	1	..	..	..	1
S. P-P. Sys.	2	2
Total	4	20	..	150	174

trucks, 224 were in the hands of store forces, as compared with 174 assigned to shop forces and 107 to station forces.

Of the hand-operated jack lift trucks reported, 580 are



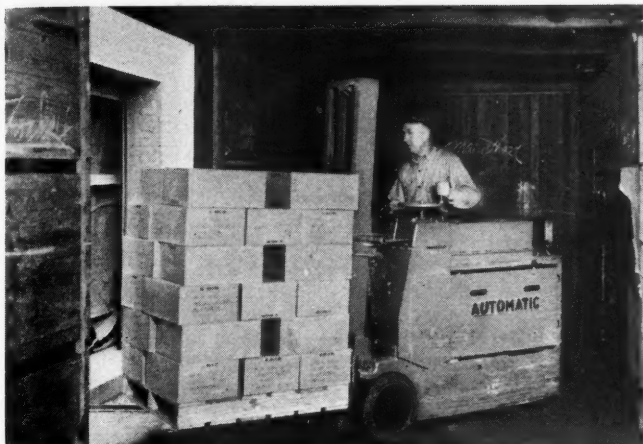
Fork Type Truck Which Both Tilts and Lifts—Courtesy Electric Storage Battery

department, 1,429 units are in charge of car and locomotive forces and 784 units are assigned to maintenance of way and engineering forces.

Stations reported 23,670 tractor-trailers, store departments 13,050 and shops 3,127. Store departments report 62,094 lift truck skids, as compared to 4,242 assigned to shops and 2,090 reported by stations. By con-

Off-Rail Equipment for Moving Material in Non-Revenue Service

Railroads	Automobiles	Highway Trucks	Tractors ¹ Gas Engine	Tractors Electric	Tractors ² Crawlers	Tractor Cranes	Lift Trucks	Other Motorized Trucks	Jack Lift Trucks	Total Mechanical Units	Tractor Trailers	Lift Truck Skids	Baggage Trucks	Hand Trucks	Other Trucks, Cais and Wagons	Total Trailers, Skids and Wagons	Total Equipment
Alton.....	—	2	6	2	—	4	—	—	4	18	180	1,061	588	380	56	2,265	2,283
Alton & Sou.....	—	2	—	—	—	—	—	—	—	2	—	—	—	3	—	3	5
A. T. & S. F.....	36	88	59*	4*	—	39*	—	1*	—	227*	878*	—	—	16	—	878*	1,105*
A. B. & C.....	—	1	—	—	—	—	—	—	—	1	—	—	—	—	12	—	29
Atlanta Term.....	—	—	—	—	—	—	—	—	—	—	—	—	20	6	166	192	192
A. C. L.....	—	37	13	—	—	3	—	1	7	61	277	163	395	3,010	441	4,286	4,347
Bang. & Aroos.....	1	—	—	—	—	—	—	—	—	1	—	—	49	209	26	284	285
B. & O.....	—	16	35	14	5	50	19	3	24	166	839	372	932	4,278	227	6,648	6,814
B. & O. C. T.....	—	—	3	—	—	3	—	2	1	9	211	11	—	121	18	361	370
Belt of Chi.....	—	—	—	—	—	—	—	—	—	4	—	15	—	72	166	253	257
B. & L. E.....	2	3	—	—	—	—	—	—	—	22	18	—	43	162	209	432	454
B. & Me.....	12*	19*	42*	—	1*	11*	46*	3	10*	141*	1,509*	502*	—	—	10*	2,021*	2,162*
C. P. R. Sys.....	8	15	24	7	9	18	12	25	11	129	386	403	45	672	503	2,009	2,138
C. Vt.....	—	—	—	—	—	—	—	—	—	11	12	—	—	4	1	17	28
C. of Ga.....	—	—	—	—	—	—	—	—	—	39	154	159	149	1,157	546	2,165	2,204
C. of N. J.....	—	—	—	—	—	—	—	—	—	72	353	311	165	586	171	1,586	1,658
C. & W. C.....	—	—	—	—	—	—	—	—	—	—	—	—	11	189	28	228	228
C. & O.....	1	17	45	4	1	28	17	16	26	155	2,047	2,232	579	1,737	1,336	7,931	8,086
C. & E. L.....	2	7	4	3	—	2	—	—	15	24	12	82	98	415	30	637	661
C. & I. M.....	—	—	—	—	—	—	—	—	—	14	1	—	10	14	1	26	40
C. & N. W.....	7	30	14	1	4	19	3	—	11	89	510	756	1,736	2,767	1,744	7,513	7,602
C. & W. I.....	—	1	1	—	—	—	—	8	—	10	202	—	133	31	10	376	386
C. B. & Q.....	23	29	85	12	3	36	9	—	68	265	4,597	5,369	1,658	3,116	497	15,237	15,502
C. G. W.....	—	—	—	—	—	—	—	—	—	6	15	—	3	—	—	21	27
C. M. St. P. & P.....	49	79	45	12	6	30	47	—	95	372	4,072	6,622	—	—	—	10,694	11,066
C. R. I. & P.....	—	10	26	3	—	14	1	—	16	70	124	700	—	139	105	1,068	1,138
Chi. Union Sta.....	—	—	—	21	—	1	—	8	2	39	—	—	885	—	54	939	978
Cin. Union Sta.....	—	3	6	15	—	—	—	—	—	24	—	24	206	16	—	246	270
Clinch.....	—	—	—	1	—	1	—	—	5	—	—	100	3	4	—	107	114
C. & S.....	—	1	1	—	—	2	—	—	1	5	81	—	—	4	1	86	91
Dayton Term.....	—	—	—	—	—	—	—	—	—	—	—	—	59	—	—	59	59
D. & H.....	1	5	5	—	1	9	1	—	2	24	113	139	105	631	305	1,293	1,317
D. L. & W.....	—	22	—	—	—	8	39	25	—	94	142	1,533	234	1,079	574	3,562	3,656
Denver Depot.....	—	—	4	3	—	—	—	—	—	7	—	—	182	25	—	207	214
D. & R. G. W.....	—	7	9	—	9	9	—	—	9	43	106	2	122	689	154	1,073	1,116
D. & T. S. L.....	—	—	—	—	—	1	—	—	—	1	—	—	—	7	1	8	9
Det. Term.....	1	3	—	—	—	1	—	—	1	6	—	—	—	5	2	7	13
D. T. & I.....	22	2	3	—	—	9	—	—	—	36	5	—	19	115	18	157	193
D. M. & I. R.....	5	11	—	—	—	3	1	—	3	23	1	81	1	157	66	306	329
Dul. Union Depot.....	—	—	—	—	—	—	—	—	—	—	—	—	21	—	6	27	27
E. J. & E.....	—	8	5	—	—	8	2	—	3	26	67	525	—	53	38	683	709
El Paso Dept.....	—	—	—	—	—	—	—	—	—	—	—	—	34	5	2	41	41
Erie.....	5	34	14	6	—	26	10	—	310	405	139	3,715	565	2,323	1,503	8,245	8,650
F. E. C.....	2	2	2	—	—	2	1	2	1	12	4	—	123	365	30	522	534
Ft. W. & D. C.....	—	2	1	—	—	4	—	—	—	7	10	—	111	197	23	341	348
Ga. & Fla.....	18	1	8	—	—	8	1	—	—	36	202	14	103	402	359	1,080	1,116
Grand Trunk.....	23	115	47	—	10	9	10	4	24	242	1,373	1,612	1,321	2,884	434	7,624	7,866
Gr. N.....	—	1	—	—	—	1	1	—	—	4	—	—	17	51	30	98	102
G. B. & W.....	1	—	—	—	—	2	—	—	—	2	—	—	41	221	34	296	298
G. M. & O.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
I. C.....	1	27	38	21	2	35	21	—	31	176	1,319	5,806	1,339	2,990	1,819	13,273	13,449
Indpls. Union.....	—	—	17	—	—	—	—	—	—	3	—	—	115	—	4	119	122
I. G. N.....	—	—	22	17	—	13	3	—	11	44	155	1,224	—	43	1	1,423	1,467
Jacksonville Term.....	—	—	—	—	—	—	—	—	—	39	270	—	9	50	—	320	359
Joliet Depot.....	—	—	—	—	—	16	—	15	—	32	—	—	622	233	2	855	887
K. C. T.....	2	1	—	—	—	—	—	—	—	4	—	—	—	7	19	9	13
L. S. & I.....	3	1	—	—	—	—	—	—	—	3	—	—	—	4	19	23	26
L. & N. E.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
L. V.....	9	31	16	2	—	9	5	4	5	81	139	299	—	111	39	588	669
L. & N.....	—	7	30	13	1	16	12	—	11	90	1,118	2,047	540	1,975	1,042	6,722	6,812
Me. C. & Port. Term.....	—	15	6	6	—	2	1	21	—	51	476	1	307	483	25	1,292	1,343
Memphis Depot.....	—	—	—	—	—	—	—	—	—	3	—	—	65	—	4	69	72
M. & St. L.....	—	6	—	—	2	3	—	—	—	11	11	—	77	41	129	140	140
Soo.....	—	3	2	—	—	2	10	—	10	27	40	475	172	1,355	330	2,352	2,379
Minn. Trans.....	—	2	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—
Miss. Cent.....	—	—	—	—	—	—	—	—	—	—	—	—	2	2	—	4	4
Mononga.....	—	5	—	—	—	1	—	—	—	6	1	—	8	63	10	82	88
Montour.....	—	—	—	—	—	—	—	—	—	—	—	—	—	5	23	28	28
M-K-T.....	8	8	5	—	1	9	—	4	—	35	42	12	549	1,216	153	1,972	2,007
Mo. Pac.....	67	23	58	—	3	64	31	9	25	280	1,237	3,500	823	1,843	12	7,415	7,695
Nev. Mor.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
N. Y. C. Sys.....	12	83	91	51	6	100	79	154	86	672	5,150	6,181	1,773	4,411	2,854	20,369	21,031
N. Y. C. & St. L.....	—	3	7	—	—	9	—	—	1	20	61	—	158	—	357	576	596
N. Y. N. H. & H.....	29	139	5	145	3	30	10	24	8	393	3,267	289	596	1,902	734	6,788	7,181
N. Y. O. & W.....	—	2	—	—	—	2	—	—	—	4	—	—	—	16	14	30	34
N. & W.....	—	41	64	8	—	18	10	9	28	178	1,992	851	319	1,265	418	4,845	5,023
N. W. P.....	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
N. P.....	20*	25	16	—	6	5	4	1	31	89	173	2,800	33	518	243	3,767	3,856
Penna.....	179*	—	—	—	—	11*	25*	—	—	394*	—	—	—	—	—	—	394*
Pere Mar.....	—	7	9	1	—	—	—	—	—	18	387	—	148	587	219	1,341	1,359
P. & P. U.....	—	1	—	—	1	1	—	—	—	11	—	—	—	204	107	311	322
P. S. & N.....	—	2	—	—	—	—	—	—	—	2	—	—	3	23	6	32	34
Pullman Rd.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Reading.....	3	17	23	23	—	12	3	36	25	142	295	366	391	1,036	174	2,262	2,404
R. F. & P.....	—	2	1	—	—	—	—	—	—	3	—	1	—	10	—	11	14
Rutland.....	—	—	—	—	—	2	—	3	—	5	—	—	15	237	65	317	322
St. L-S. W.....	7*	9*	6*	—	—	2*	—	—	—	24*	17*	—	—	—	—	17*	41*
St. Paul Depot.....	—	—	8	—	—	—	—	—	—	8	—	—	434	10	128	572	580
Salt Lake Depot.....	—	—	1	—	—	—	—	—	—	1	—	—	22	—	3	25	26
S. A. L.....	—	9	2	—	—	—	3	2	6	22	88	—	261	1,640	1,084	3,073	3,095
Sou.....	5	20	17	4	4	2	—	—	46	98	665	68	1,356	4,711	2,738	9,538	9,636
S. P.—P. Sys.....	50	200	45	5	13	13	—	2	14	342	2,849	3,300</					



Automatic Lift Trucks in Freight House and Stores Work

trast, freight and passenger stations reported 24,219 baggage trucks, as compared with 321 in shop use and 265 in store department use; freight and passenger stations also reported 49,522 two-wheel hand push trucks, as compared with 7,602 in shops and 3,284 in stores. Combining all trailers, skids and hand trucks and other wagons and carts reported, the survey shows 115,945 in use for handling mail, baggage and freight, 80,494 units in charge of store forces and 20,573 units in charge of shop forces.

Railway Express Has 58,785 Units

In addition to the equipment reported by railroads in 1940, the Railway Express Agency owned 58,785 units of towing and trucking equipment consisting of 11,491 gasoline burning trucks and tractors for platform and street service, 570 electric trucks and tractors for street service, 930 trailers for the automotive equipment in street service, 315 electric trucks for platform service and 45,479 four-wheeled trailers and floor trucks for platform service. Since the first of this year this company has placed orders for 2,667 additional trucks. Records of the towing and trucking equipment owned by the Pullman Company and the private car lines were not requested.

662 Machines on N. Y. C.

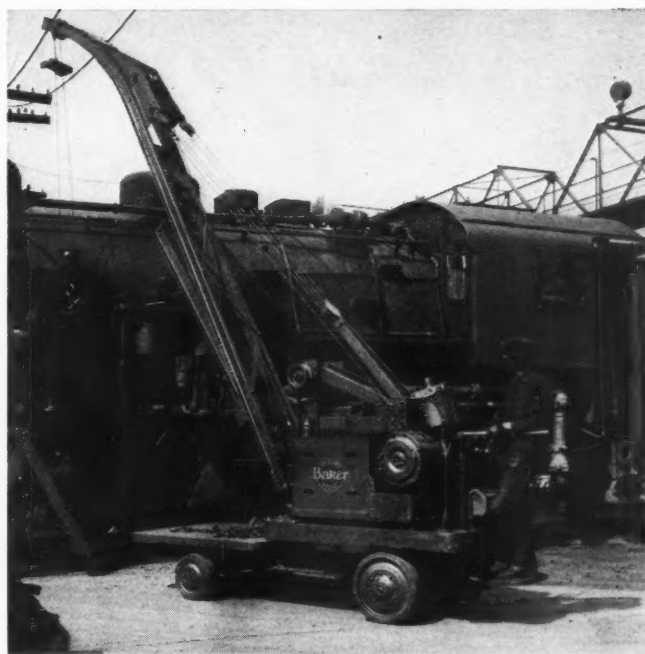
The New York Central made a thorough canvass of its lines and reported 21,031 units of equipment for handling materials. The New York Central heads the list in the number of gas engine tractors, the number of crane trucks, the number of electric lift trucks, and

the number of other motorized trucks reported. The 662 mechanical units reported by the New York Central lines were 10 per cent of the total reported by all companies. The New York Central Lines also reported the largest number of tractor trailers and the largest number of wagons. The Southern Pacific—Pacific Lines reported the largest number of highway trucks, crawlers and baggage trucks, while the Erie reported the largest number of manually-operated jack lift trucks. The Union Pacific reported the largest number of lift truck skids, the Missouri Pacific reported the largest number of automobiles and the Southern reported the largest number of hand trucks.

S. P. Biggest Auto Trucker

A total of 67 automobiles were reported by the Missouri Pacific; 50 by the Southern Pacific; 49 by the Chicago, Milwaukee, St. Paul & Pacific; 36 by the Atchison, Topeka and Santa Fe; 23 by the Chicago, Burlington & Quincy and also by the Great Northern, and 22 by the Detroit, Toledo & Ironton. The Southern Pacific-Pacific Lines reported 200 auto trucks, as compared with 179 reported for the Pennsylvania; 139 for the New York, New Haven & Hartford; 115 for the Great Northern; and 88 by the Santa Fe.

As compared with 91 gas-engine industrial tractors reported by the New York Central Lines; 85 were reported by the Burlington; 64 by the Norfolk & Western; 45 by the Chesapeake & Ohio and the Milwaukee and 58 by the Missouri Pacific. Next to the New York Central Lines, the Missouri Pacific reported the largest number of industrial tractors equipped with cranes, the total being 64. As compared with this, 50 were reported by the Baltimore & Ohio; 39 by the Milwaukee; 37 by the Union Pacific; and 36 by the Burlington. A total of 79 motorized lift trucks were reported by the



Baker Revolving Electric Crane in Locomotive Repair Work

New York Central Lines, 47 by the Milwaukee and 26 by the Union Pacific.

The Erie reported 310 manually-operated jack lift trucks, as compared to 95 reported by the Milwaukee, 86 by the New York Central Lines, 60 by the



Elwell-Parker Lift Truck Towing Trailers in Freight Station Service

Union Pacific and 46 by the Southern Pacific—Pacific Lines.

Tractor trailers totaled 5,150 on the New York Central

Lines, 4,597 on the Burlington, 4,072 on the Milwaukee, 3,267 on the New York, New Haven & Hartford, 2,849 on the Southern Pacific and 2,047 on the Chesapeake & Ohio. Lift truck skids, as reported, totaled 6,181 on the New York Central Lines, 6,622 on the Burlington, 14,337 on the Union Pacific (including 7,602 portable nesting boxes) 5,806 on the Illinois Central and 3,300 on the Southern Pacific.

Baggage trucks reported totaled 1,736 on the North Western, 1,658 on the Burlington, 1,339 on the International-Great Northern, 1,773 on the New York Central Lines, and 1,356 on the Southern, as compared with 2,752 on the Southern Pacific-Pacific Lines, while two-wheel hand push trucks were reported to the number of 4,278 on the Baltimore & Ohio, 3,116 on the Burling-

Tractor Trailers					
	Stores	Shops	Way	Stations	Total
Alton	52	78	..	50	180
A. T. & S. F.	791*	87*	..	..	878*
A. C. L.	65	..	..	212	277
B. & O. C. T.	133	119	..	587	839
B. & L. E.	11	7	..	211	211
B. & Me.	286	24	..	1,199	1,509
C. P. R. Sys.	12	380	6	..	386
C. Vt.	35	..	..	19	54
C. of Ga.	195	42	..	182	419
C. of N. J.	1,294	..	..	753	2,047
C. & O.	46	..	..	..	46
C. & E. I.	233	277	..	..	510
C. & N. W. ....	..	1	..	..	1
C. & I. M. ....	..	5	..	197	202
C. & W. I.	1,586	17	..	2,994	4,597
C. B. & Q.	15	..	..	..	15
C. G. W.	1,018	..	..	3,054	4,072
C. M. St. P. & P.	124	..	..	..	124
C. R. I. & P.	81	..	..	..	81
C. & S.	3	110	..	..	113
D. & H. ....	..	..	..	142	142
D. L. & W.	106	..	..	..	106
D. & R. G. W.	1	4	..	..	5
D. T. & I.	1	..	..	..	1
D. M. & I. R.	67	..	..	..	67
E. J. & E.	66	73	..	..	139
Erie ....	..	4	..	..	4
F. E. C. ....	..	10	..	..	10
Ft. W. & D. C.	52	..	..	150	202
Grand Trunk	301	142	..	930	1,373
G. N.	976	..	..	343	1,319
I. C.	72	83	..	..	155
I-G. N. ....	..	..	..	270	270
Jacksonville Term.	22	110	..	7	139
L. V.	153	208	..	757	1,118
L. & N.	25	3	..	448	476
Me. C. & Port. Term.	11	..	..	..	11
M. & St. L.	40	..	..	..	40
Soo ....	..	1	..	..	1
Mononga.	41	1	..	..	42
M-K-T	50	310	..	877	1,237
Mo. Pac.	611	274	..	4,265	5,150
N. Y. C. Sys. ....	..	263	..	..	263
Shops	38	1	..	..	39
B. & A.	53	..	..	4	57
Lines East	112	..	..	2,942	3,054
Lines West	41	..	..	669	710
Mich. Cent.	332	..	..	..	332
C. C. C. & St. L. ....	..	..	..	150	150
Clev. Term.	35	10	..	500	545
P. & L. E.	20	41	..	..	61
N. Y. C. & St. L.	2	113	..	3,152	3,267
N. Y. N. H. & H. ....	..	322	..	1,670	1,992
N. & W.	149	23	1	..	173
N. P.	141	1	..	245	387
Pere Mar.	127	47	2	119	295
Reading	6*	10*	1*	..	17*
St. L. S. W.	7	2	..	79	88
S. A. L.	85	163	..	417	665
Sou.	2,778	..	1	70	2,849
S. P.-P. Sys.	101	14	..	230	345
T. & N. O.	24*	..	..	..	24*
T. & P.	1,030	..	..	..	1,030
Union Pacific ....	..	..	..	225	225
W. Md.	5	5	..	..	10
Wes. Pac.	16	..	..	..	16
W. & L. E. ....	..	..	..	..	..
Total	13,050	3,127	11	23,854	40,042

* Year 1931.



Lewis-Sheppard Jack Lift Trucks and Skids Unloading Cars on the Boston & Albany

ton, 2,323 on the Erie, 2,884 on the Great Northern, 2,990 on the Illinois Central, and 4,411 on the New York Central, as compared with 4,711 on the Southern Pacific Lines.

Of the 63 motor buses reported for the railroads participating in the survey, 12 are used by maintenance forces on the New York, New Haven & Hartford, while 8 are in charge of equipment repair forces on the Grand Trunk.

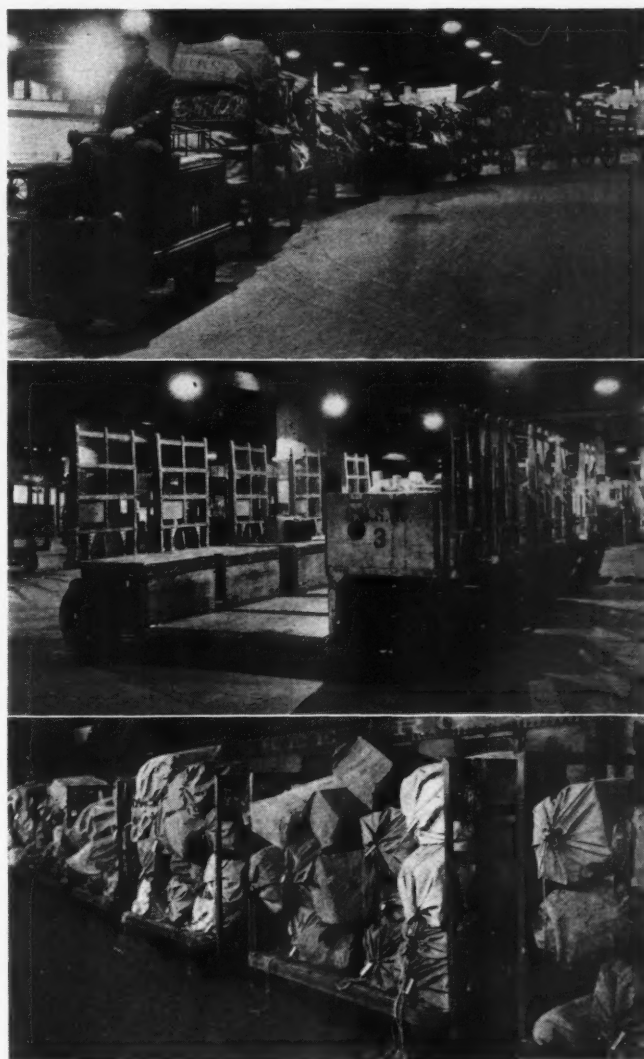
The Santa Fe leads in the number of automobiles assigned to purchases and stores department forces, the number being 14. The Milwaukee, the Grand Trunk and the New Haven reported the largest number of automobiles assigned to maintenance of way forces, the numbers being 17 and 16, respectively, while the Missouri Pacific reported 63 automobiles assigned to traffic department employees. Store department forces operate 60 highway trucks on the Santa Fe, 71 on the Southern Pacific—Pacific Lines, 62 on the Union Pacific and 48

Highway Trucks for Railway Material

	Stores	Shops	Way	Stations	Total
Alton	2	..	..	..	2
Alt. & Sou.	..	..	..	2	2
A. T. & S. F.	60	14	12	2	88
A. B. & C.	1	..	..	..	1
A. C. L.	20	11	4	1	36
B. & O.	11	2	3	..	16
Belt of Chi.	2	..	1	..	3
B. & L. E.	2	..	..	..	2
B. & Me.	2*	1*	14*	2*	19*
C. P. R. Sys.	6	7	..	..	13
C. Vt.	..	..	3	..	3
C. of Ga.	4	..	1	..	5
C. of N. J.	6	..	..	..	6
C. & O.	7	2	4	..	13
C. & I. M.	1	1	1	2	5
C. & N. W.	18	3	9	..	30
C. & W. I.	..	..	1	..	1
C. B. & Q.	21	1	7	..	29
C. G. W.	1	..	..	..	1
C. M. St. P. & P.	33	3	14	5	55
C. R. I. & P.	10	..	..	..	10
Cin. Union Sta.	2	..	1	..	3
C. & S.	1	..	..	..	1
D. & H.	5	..	..	..	5
D. L. & W.	1	..	14	7	22
D. & R. G. W.	1	2	4	..	7
Det. Term.	..	..	3	..	3
D. T. & I.	..	..	1	1	2
D. M. & I. R.	2	..	9	..	11
E. J. & E.	3	..	5	..	8
Erie	5	2	23	4	34
F. E. C.	2	..	..	..	2
Ft. W. & D. C.	1	..	1	..	2
Grand Trunk	..	..	..	1	1
G. N.	7	11	79	2	99
G. B. & W.	1	..	..	..	1
I. C.	19	3	5	..	27
K. C. T.	1	..	..	..	1
L. S. & I.	..	1	..	..	1
L. V.	1	6	24	..	31
L. & N.	5	1	1	..	7
Me. C. & Port. Term.	3	1	8	..	12
M. & St. L.	1	2	2	..	5
Soo	2	1	..	..	3
Minn. Trans.	..	1	1	..	2
Mononga.	..	3	2	..	5
M-K-T	7	..	1	3	8
Mo. Pac.	13	1	6	3	23
N. Y. C. Sys.	48	8	21	6	83
B. & A.	3	..	1	..	4
Lines East	7	3	12	4	26
Lines West	19	..	3	2	24
Mich. Cent.	7	..	..	..	7
C. C. C. & St. L.	10	2	1	..	13
Clev. Term.	..	2	2	..	4
Shops	..	1	..	..	1
P. & L. E.	2	..	2	..	4
N. Y. C. & St. L.	3	..	..	..	3
N. Y. N. H. & H.	..	11	125	3	139
N. Y. O. & W.	2	..	..	..	2
N. & W.	..	1	11	..	12
N. W. P.	1	..	..	..	1
N. P.	6	..	10	8	24
Penna.	..	..	..	164*	164*
Pere Mar.	2	1	3	1	7
P. & P. U.	1	..	..	..	1
P. S. & N.	..	..	2	..	2
Reading	3	1	10	1	15
R. F. & P.	2	..	..	..	2
St. L. S. W.	2*	..	..	1*	3*
S. A. L.	8	..	1	..	9
Sou.	17	..	..	3	20
S. P.-P. Sys.	71	3	65	7	146
S. P. & S.	1	1	4	1	7
T. & N. O.	10	..	8	..	18
T. & P.	7*	1*	..	3*	11*
Union Pacific	62	7	9	..	78
Va.	1	..	..	..	1
W. Md.	2	1	5	1	9
Wes. Pac.	3	..	3	..	6
W. & L. E.	1	..	1	..	2
Total	543	115	542	231	1,431

* Year 1931.

on the New York Central Lines. Shop forces operate 14 highway trucks on the Santa Fe, and 11 on the Atlantic Coast Line, the Great Northern, and the New Haven. By comparison, maintenance of way forces



Handling Mail and Baggage in the Chicago Union Station with Tractors and Trucks—All Equipment Rubber Tired

operate 12 highway trucks on the Santa Fe, 14 on the Milwaukee and the Delaware, Lackawanna & Western, 23 on the Erie, 79 on the Great Northern, 24 on the Lehigh Valley, 21 on the New York Central Lines, 125 on the New Haven and 65 on the Southern Pacific.

127 Tractors in Milwaukee Stores

Tractors, lift trucks, crane trucks and other self-propelled towing equipment operated by store forces included 127 machines on the Milwaukee, as compared with 34 on the Baltimore & Ohio, 60 on the Chesapeake & Ohio, 78 on the Chicago, Burlington & Quincy, 63 on the Illinois Central, 91 on the New York Central Lines, 52 on the Reading and 95 on the Union Pacific. On the Milwaukee all towing and trucking for storehouses and shops is performed by the stores department.

The largest assignments of tractor equipment to locomotive and car department forces included 77 machines on the Baltimore & Ohio, 73 on the Canadian Pacific, 39 on the Erie, 107 on the Missouri Pacific, 176 on the New York Central Lines, 82 on the Norfolk & Western, and 50 on the New Haven; while the number operated in freight and passenger station service totaled 38 on the Burlington, 30 on the Great Northern, 44 on the Kansas City Terminal, 208 on the New York Central System, 156 on the New Haven, and 30 on the Southern Pacific.

Of the 511 motorized lift trucks reported by all the

railroads participating in the survey, 47 are in the stores of the Milwaukee. The New York Central reported the largest number assigned to shop forces, the number being 47, and the Central of Georgia, with 23 trucks, had the largest number reported in freight station service. The Illinois Central reported 18 electric lift trucks

in supply work, the Union Pacific 24 and the New York Central 29.

Of the 174 electric baggage trucks reported by the railroads, 11 are assigned to shops of the New York Central, 80 are used in freight station work on the New York Central while the Kansas City Terminal has 15 in depot service and the Central of New Jersey and the New Haven each have 10 in depot service.

Hand-Operated Jack Lift Trucks

	Stores	Shops	Way	Stations	Total
Alton	2	1	..	1	4
A. C. L.	5	2	..	..	7
B. & O.	24	..	..	..	24
B. & O. C. T.	1	..	..	..	1
Belt of Chi.	1	..	..	..	1
B. & Me.	4	3	..	3	10
C. & O.	16	3	..	7	26
C. & E. I.	6	1	..	8	15
C. & N. W.	7	..	..	4	11
C. B. & Q.	50	14	..	4	68
C. M. St. P. & P.	85	..	..	10	95
C. R. I. & P.	16	..	..	..	16
Cin. Union Sta.	2	..	..	..	2
Clinch. ....	..	..	..	5	5
C. & S.	1	..	..	..	1
D. & H.	1	1	..	..	2
D. & R. G. W. ....	..	..	..	9	9
Det. Term. ....	..	1	..	..	1
D. M. & I. R.	2	1	..	..	3
E. J. & E.	3	..	..	..	3
Erie	37	19	..	254	310
F. E. C.	1	..	..	..	1
G. N.	22	..	..	2	24
I. C.	29	..	..	2	31
I. G. N.	10	1	..	..	11
L. V.	5	..	..	2	7
L. & N.	1	8	..	2	11
Soo.	9	..	..	1	10
Mo. Pac.	25	..	..	..	25
N. Y. C. Sys.	58	16	..	12	86
B. & A.	11	..	..	..	11
Shops ....	..	13	..	..	13
Lines East	4	..	..	..	4
Lines West	14	..	..	5	19
Mich. Cent.	3	..	..	..	3
C. C. C. & St. L.	23	..	..	3	26
Clev. Term. ....	..	3	..	..	3
P. & L. E.	3	..	..	4	7
N. Y. C. & St. L. ....	..	..	..	1	1
N. Y. N. H. & H.	2	..	..	6	8
N. & W.	20	..	..	8	28
N. P.	31	..	..	..	31
Reading	14	..	..	11	25
S. A. L.	3	..	..	3	6
Sou. ....	..	14	..	32	46
S. P.-P. Sys.	14	..	..	..	14
T. & N. O. ....	..	1	..	..	1
T. of St. L. ....	..	1	..	..	1
T. & P.	4	..	..	..	4
Union Pacific	59	1	..	..	60
W. Md.	5	..	..	..	5
C. P. R. Sys.	2	5	3	1	11
C. of N. J.	3	..	..	3	6
Total	580	93	3	389	1,065

Erie Leads in Jacks

Hand-operated jack lift trucks assigned to railway storehouses include 85 on the Milwaukee, 50 on the Burlington, 59 on the Union Pacific, 58 on the New York



A Yale Four-In-One Tractor that Pulls, Lifts, Carries Loads and Handles Skids

Central Lines, 37 on the Erie, 31 on the Northern Pacific and 20 on the Norfolk & Western. Shop forces reported 14 on the Burlington, 19 on the Erie, 16 on the New York Central Lines, and 14 on the Southern. The Erie reported 254 hand-operated jack lift trucks in freight station work while the Southern reported 32 in freight station work. The total number of jack lift trucks reported by the Erie for all departments was 30 per cent of the total number reported by all companies.

Tractor trailers assigned to stores work included 1,294 on the Chesapeake & Ohio, 1,586 on the Burlington, 1,018 on the Milwaukee, 1,030 on the Union Pacific and 2,778 on the Southern Pacific; while the number assigned to freight station work included 2,994 on the Burlington, 3,054 on the Milwaukee, 4,265 on the New York Central Lines, 3,152 on the New Haven, and 1,670 on the Norfolk & Western. This equipment does not include baggage trucks and miscellaneous wagons and carts, many of which are used as trailers where self-propelled equipment is available.

The lift truck skids reported by the railroads were principally used by the store department and the equipment in charge of store department forces included 2,429 on the Chesapeake & Ohio, 5,360 on the Burlington, 6,622 on the Milwaukee, 2,758 on the Erie, 5,806 on the Illinois Central, 3,500 on the Missouri Pacific, 4,083 on the New York Central Lines, 2,800 on the Northern Pacific, and 3,300 on the Southern Pacific, as well as the 14,337 on the Union Pacific which, as previously explained, includes 7,602 portable nesting boxes. The largest installation of skids in freight station work, as reported, was 1,125 reported by the D. L. & W., which was 50 per cent



Mercury Lift Truck in Passenger Train Service

of all of the lift truck skid equipment reported in freight station operation.

Over 60,000 Hand Trucks

While the automobile, the tractor and the lift truck have replaced hundreds of hand push trucks in railway service, especially in stores and shop work, this equipment is far from extinct, judging from the 60,742 units reported by the railroads this year. Store departments reported 295 hand push trucks on the Union Pacific, 198 on the Northern Pacific, 472 on the New York Central Lines, 231 on the Great Northern and 159 on the Canadian Pacific. Car and locomotive shop forces reported 300 on the Baltimore & Ohio, 473 on the Canadian Pacific, 438 on the Chesapeake & Ohio, 424 on the North Western, 204 on the Great Northern, 210 on the Soo, 943 on the New York Central, 238 on the New Haven, 312 on the Norfolk & Western, 224 on the Texas & New Orleans, and 469 on the Union Pacific. The largest number by far, however, are used in freight and baggage stations. The two-wheel hand push trucks in station service totaled 2,811 on the Atlantic Coast Line, 3,819 on the Baltimore & Ohio, 2,205 on the Chicago & North Western, 2,768 on the Burlington, 2,081 on the Erie, 2,449 on the Great Northern, 2,978 on the Illinois Central, 2,987 on the New York Central Lines, 1,590 on the New Haven, 1,005 on the Reading, 1,428 on the Seaboard Air Line, 4,163 on the Southern, 1,812 on the Southern Pacific-Pacific Lines, and 1,198 on the Texas & New Orleans.

All Sizes of Highway Equipment

Practically all of the roads reporting highway trucks used several sizes of equipment. The actual number of each size is indeterminate but 470 trucks identified by size included 62 ½-ton trucks, 34 ¾-ton, 32 1-ton, 252 1½-ton, 42 2-ton, 18 2½-ton, 13 3-ton, 7 3½-ton, 1 4-ton, 2 5-ton, 6 6-ton, and 1 7-ton. The New Haven reported 1 7-ton auto truck, the Union Pacific and the Delaware, Lackawanna & Western have one 6-ton and five 6-ton trucks, respectively. The Central of New Jersey, the D. M. & I. R., the New Haven and the Reading have four-ton trucks and the Baltimore & Ohio; the Milwaukee; the Elgin, Joliet & Eastern; the Illinois Central; the Missouri-Kansas-Texas; the Southern Pa-

	Stores	Shops	Way	Stations	Total
D. & T. S. L.	1	..	..	..	1
Det. Term. ....	..	2	..	..	2
D. T. & I. ....	..	15	..	22	37
D. M. & I. R.	23	44	..	..	67
Dul. Union Depot ....	..	..	..	27	27
E. J. & E. ....	..	..	..	38	38
El Paso Depot ....	..	..	..	36	36
Erie	5	50	..	2,013	2,068
F. E. C. ....	..	..	..	153	153
Ft. W. & D. C.	2	..	..	132	134
Ga. & Fla. ....	..	4	..	5	9
Grand Trunk	4	16	..	442	462
G. N.	59	91	..	1,605	1,755
G. B. & W.	5	11	..	31	47
G. M. & O.	3	9	..	63	75
I. C. ....	..	20	..	3,138	3,158
Indpls. Union ....	..	..	..	119	119
I-G. N. ....	..	1	..	..	1
Joliet Depot ....	..	..	..	9	9
K. C. T. ....	..	5	..	617	622
L. S. & I.	1	1	..	..	2
L. & N. E.	1	18	..	..	19
L. V.	3	20	5	11	39
L. & N.	24	41	1	1,516	1,582
Me. C. & Port. Term.	1	16	..	315	332
Memphis Depot ....	..	..	..	69	69
M. & St. L.	5	36	..	..	41
Soo	37	..	..	465	502
Miss. Cent.	1	2	..	..	2
Mononga. ....	..	23	..	16	18
Montour. ....	..	..	..	..	23
M-K-T	96	21	1	584	702
Mo. Pac.	12	..	..	823	835
Nev. Nor. ....	..	1	..	2	3
N. Y. C. Sys.	370	1,125	28	3,104	4,627
Shops ....	..	564	..	..	564
B. & A.	8	32	..	..	40
Lines East	63	302	20	145	530
Lines West	131	..	..	1,175	1,306
Mich. Cent.	38	..	..	674	712
C. C. C. & St. L.	78	147	6	727	958
Clev. Term. ....	..	49	2	3	54
P. & L. E.	52	31	..	380	463
N. Y. C. & St. L.	26	..	..	489	515
N. Y. N. H. & H. ....	..	188	..	1,142	1,330
N. Y. O. & W.	3	11	..	..	14
N. & W.	33	248	..	456	737
N. P.	74	187	5	10	276
Pere Mar.	8	17	..	342	367
P. & P. U. ....	..	..	..	107	107
P. S. & N.	5	..	..	4	9
Pullman Rd. ....	..	1	..	..	1
Reading	5	26	..	534	565
Rutland ....	..	2	..	102	104
St. Paul Depot ....	..	..	..	538	538
Salt Lake Depot ....	..	..	..	25	25
S. A. L.	28	77	..	1,240	1,345
Sou.	39	683	..	3,372	4,094
S. P-P. Sys. ....	..	..	..	2,752	2,752
S. P. & S.	15	4	2	90	111
T. & N. O.	44	52	..	525	621
T. of St. L.	1	19	..	666	686
Union Pacific	2	264	7	..	273
Union of Dallas ....	..	..	..	190	190
Va.	3	2	..	53	58
W. Md.	6	46	..	72	124
Wes. Pac.	1	2	..	92	95
W. & L. E.	11	82	..	..	93
Total	2,066	5,602	50	40,733	48,451

Baggage Trucks, Wagons and Carts

	Stores	Shops	Way	Stations	Total
Alton	11	42	..	591	644
A. B. & C. ....	..	12	..	..	12
Atlanta Term. ....	..	..	..	186	186
A. C. L.	16	75	..	745	836
Bang. & Aroos. ....	..	..	..	75	75
B. & O.	95	174	..	890	1,159
B. & O. C. T.	6	6	..	6	18
Belt of Chi. ....	..	..	..	166	166
B. & L. E.	22	78	..	152	252
B. & Me. ....	..	9	..	1	10
C. P. R. Sys.	308	312	..	32	552
C. Vt.	1	..	..	..	1
C. of Ga.	41	36	..	618	695
C. of N. J.	5	21	..	310	336
C. & W. C.	1	4	1	33	39
C. & O.	5	310	..	1,600	1,915
C. & E. I.	13	8	..	107	128
C. & I. M.	2	9	..	..	11
C. & N. W.	333	876	..	2,271	3,480
C. & W. I. ....	..	2	..	141	143
C. B. & Q.	91	54	..	2,010	2,155
C. G. W.	3	..	..	5	8
C. R. I. & P.	103	2	..	..	105
Chi. Union Sta. ....	..	..	..	934	934
Cin. Union Sta.	2	4	..	200	206
Clinch. ....	..	..	..	3	3
C. & S.	1	..	..	..	1
Dayton Term. ....	..	..	..	59	59
D. & H.	12	33	..	365	410
D. L. & W.	12	64	..	732	808
Denver Depot ....	..	..	..	182	182
D. & R. G. W.	1	112	..	163	276

cific, the Missouri Pacific and the Western Pacific all own 3 or 3½-ton trucks.

Gas engine industrial tractors in railway service range in size from 1 ton to 5 tons and from 9 h.p. to 80 h.p. The Canadian Pacific reported three 60 h.p. and two 80 h.p. machines of this type. The majority of the tractors are 2½-ton machines.

Of 235 electric cranes identified by sizes, 12 were 1-ton, 94 were 1½-ton, 54 2-ton, 46 2½-ton, 24 3-ton, and 4 4-ton. The Milwaukee reported four 4-ton units, while 3-ton units were reported by the Milwaukee; the Delaware, Lackawanna & Western; the Elgin, Joliet & Eastern; the Minneapolis & St. Louis; the Norfolk & Western; the New York, Ontario & Western; the Southern and the Texas & New Orleans.

The 251 motorized lift trucks which were identified by size included 4 1-ton sizes, 28 1½-ton, 84 2-ton, 127 3-ton, 3 4-ton, 4 5-ton, and 1 11-ton machines. The Missouri Pacific reported 2 lumber carriers of 7½ tons capacity each, 1 11-ton lift truck and 22 3-ton gas-electric lift trucks. The Illinois Central reported 3 4-ton lift trucks and 1 5-ton lift truck while other roads reporting 3-ton lift trucks included the Canadian Pacific, the Central of Georgia, the Central of New Jersey, the Great

Northern, the Louisville & Nashville, the Minneapolis & St. Louis, the Missouri Pacific, the New Haven, the Norfolk & Western, the Northern Pacific, and the Western Maryland.

A total of 302 jack lift trucks were identified by size and this number included 14 1½-ton units, 8 1-ton, 145 1½-ton, 51 2-ton, 72 2½-ton, 4 3-ton, and 8 5-ton units. The Denver & Rio Grande Western reported 8 jack lifts of 5-ton capacity each and the Canadian Pacific, the Chesapeake & Ohio, the Central of New Jersey, the Louisville & Nashville and the Union Pacific are using 3-ton sizes. The Milwaukee has 74 jack lift trucks of ½-ton capacity and 24 of the Great Northern's jack lift trucks were 2-ton sizes.

The Bessemer & Lake Erie reported six tractor trailers of 8 tons capacity, while the Rock Island and the Norfolk & Western reported two or more trailers of 10 tons capacity.

Crawlers of ½ ton to 35 tons were reported, the Louisville & Nashville reporting 1 35-ton unit, the Milwaukee reporting 3 5½-ton units and 3 7½-ton units, the Canadian Pacific and the Delaware & Hudson reporting 15-ton units while the units reported by the Canadian Pacific also included 1 3-ton, 4 7-ton, 1 9-ton, 1 11-ton, and 1 15-ton crawler.

43 Tractors at Montreal

More than 20 railroads furnished lists of their towing and trucking equipment at specific locations. According to these lists, the Southern Pacific has 45 automobiles and highway trucks in the service of all departments at Los Angeles, 31 at Sacramento, and 109 at Oakland, all engaged in non-revenue service. No other road approached this figure. Exclusive of highway equipment, these locations are equipped with 26, 14 and 21 mechanical units, respectively.

The Canadian Pacific reported 43 mechanical units, exclusive of highway equipment, in its Montreal shops and 17 in its Winnipeg shops, while the Chesapeake & Ohio reported 47 mechanical units at Huntington, W. Va., where the equipment is used by the locomotive shops and stores. As reported, the Burlington has 23 jack lift trucks and 40 self-propelled trucks, exclusive of highway equipment, at Aurora and operates 23 industrial tractors in its Chicago freight house. At Sedalia the Missouri Pacific stores and shops report 36 machines for towing and trucking while the same road reports 48 machines in use for towing and trucking at Little Rock, Ark. The Lehigh Valley store and shops have 24 mechanical units at Sayre, Pa. The Beech Grove store on the New York Central near Indianapolis has 25 units of mechanical equipment exclusive of 3 highway trucks while 24 industrial tractors are reported in use at the Cleveland freight house of the New York Central.

Huntington Largest Concentration

The largest installation of towing and trucking equipment reported at any one location consisted of 2,691 units in charge of the store department of the Chesapeake & Ohio at Huntington, W. Va., this installation consisting of 48 mechanical units, 1,041 tractor trailers and 1,602 lift truck skids. Another large installation is in the Burlington's freight house at Chicago which has 21 mechanical units and 2,280 wagons. The store and shop equipment at Sedalia, Mo., on the Missouri Pacific totals 1,567 units, including 37 mechanical trucks and 114 trailers, and 1,400 skids, while 1,572 material-handling units are used by the store and shops of the Missouri Pacific at Little Rock, Ark. The Portland Terminal at Portland, Me., has 1,098 pieces of equipment, including

Hand Push Trucks—2 Wheeled

	Stores	Shops	Way	Stations	Total
Alton	10	45	..	325	380
Alton & Sou.	1	2	..	..	3
A. B. & C.	5	11	..	..	16
Atlanta Term.	..	..	..	6	6
A. C. L.	56	143	..	2,811	3,010
Bang. & Aroos.	..	31	..	178	209
B. & O.	159	300	..	3,819	4,278
B. & O. C. T.	6	10	..	105	121
Belt of Chi.	8	..	..	64	72
B. & L. E.	34	37	..	91	162
C. P. R. Sys.	159	473	..	40	672
C. G. W.	3	..	..	..	3
C. Vt.	4	..	..	..	4
C. of Ga.	18	156	..	983	1,157
C. of N. J.	16	86	..	484	586
C. & W. C.	3	32	3	151	189
C. & O.	25	438	..	1,274	1,737
C. & E. I.	5	3	..	407	415
C. & I. M.	5	9	..	..	14
C. & N. W.	138	424	..	2,205	2,767
C. & W. I.	9	6	..	16	31
C. B. & O.	108	140	..	2,768	3,116
C. R. I. & P.	139	..	..	..	139
Cin. Union Sta.	2	8	..	6	16
Clinch.	..	..	..	4	4
C. & S.	4	..	..	..	4
D. & H.	26	145	..	460	631
D. L. & W.	23	112	..	944	1,079
Denver Depot	..	..	..	25	25
D. & R. G. W.	41	120	..	528	689
D. & T. S. L.	2	5	..	..	7
Det. Term.	..	3	2	..	5
D. T. & I.	5	28	..	82	115
D. M. & I. R.	18	139	..	..	157
E. J. & E.	9	23	..	21	53
El Paso Depot	..	..	..	5	5
Erie	44	198	..	2,081	2,323
F. E. C.	..	..	3	362	365
Ft. W. & D. C.	..	25	..	172	197
Ga. & Fla.	2	14	..	41	57
Grand Trunk	24	2	..	376	402
G. N.	231	204	..	2,449	2,884
G. B. & W.	2	..	..	49	51
G. M. & O.	6	40	..	175	221
I. C.	12	..	..	2,978	2,990
I. G. N.	16	27	..	..	43
Jacksonville Term.	..	..	..	50	50
K. C. T.	..	..	..	233	233
L. S. & I.	3	4	..	..	7
L. & N. E.	4	..	..	..	4
L. V.	45	43	..	23	111
L. & N.	52	190	3	1,730	1,975
Joliet Depot	..	..	1	..	1
Me. C. & Port. Term.	23	62	..	398	483
M. & St. L.	15	62	..	..	77
Soo	25	210	..	1,100	1,335
Miss. Cent.	1	1	..	..	2
Mononga.	4	4	..	55	63
Montour	2	3	..	..	5
M-K-T	62	151	..	1,003	1,216
Mo. Pac.	50	10	..	1,783	1,843
Nev. Nor.	3	2	..	20	25
N. Y. C. Sys.	472	943	9	2,987	4,411
Shops	..	310	..	..	310
B. & A.	36	70	..	..	106
Lines East	157	326	9	93	585
Lines West	93	..	..	1,087	1,180
Mich. Cent.	32	..	..	714	746
C. C. C. & St. L.	92	223	..	906	1,221
Clev. Term.	3	9	..	..	12
P. & L. E.	59	5	..	187	251
N. Y. N. H. & H.	74	238	..	1,590	1,902
N. Y. O. & W.	7	9	..	..	16
N. & W.	128	312	..	825	1,265
N. P.	198	293	12	15	518
Pere Mar.	15	80	..	492	587
P. & P. U.	..	..	..	204	204
P. S. & N.	5	4	..	14	23
Pullman Rd.	..	4	..	..	4
Reading	25	..	6	1,005	1,036
R. F. & P.	10	..	..	..	10
Rutland	2	12	..	223	237
St. Paul Depot	..	2	..	8	10
S. A. L.	62	137	13	1,428	1,640
Sou.	188	360	..	4,163	4,711
S. P. P. Sys.	..	..	..	1,812	1,812
S. P. & S.	..	..	..	280	280
Spok. Intl.	2	6	..	..	8
T. & N. O.	28	224	1	1,198	1,451
T. of St. L.	14	60	..	54	128
Union Pacific	295	469	..	141	764
Va.	26	25	..	269	348
W. Md.	19	60	..	215	267
Wes. Pac.	24	28	..	..	78
W. & L. E.	23	55	..	..	78
Total	3,284	7,602	53	49,803	60,742

26 machines, 425 trailers, and 536 wagons and other trucks, while the storehouse at Beech Grove, Ind., on the New York Central, has 2,489 units, including 28 machines, 324 trucks and trailers, and 2,078 skids. At Oakland on the Southern Pacific all departments account for 3,313 units of equipment, consisting of 133 mechanical units, 1,439 trailers, 495 skids and 1,246 wagons, while the consolidated figures for all departments of the Southern Pacific at Sacramento comprise 2,489 units.

How the Army Railroads

THREE manuals recently issued by the War Department give a clear and complete picture of the organization and work of military railways.* For a total of 30 cents, railroad men may obtain from the Superintendent of Documents, Washington, D. C., information which will give them sufficient background to co-operate intelligently with the army as civilian personnel, in the event of war, or orientate them to new duties as members of railway battalions.

One manual of 28 pages presents a general outline of the organizations of military railways and inland waterways, known as the Military Railway Service and Inland Waterway Service, respectively. The M. R. S. may take over existing commercial railroad facilities in the theatre of operations and place them under railway battalions; or it may carry on joint operation with civilians in friendly territory. Also it may take over roads in conquered territory, or construct new trackage. Railway Traffic Officers—a number of whom are at present assigned to leading railroad stations to care for drafted men en route—are detailed from the M. R. S. to railroads operated by civilian agencies, having authority only in military transportation requirements and not over operation and maintenance.

The M. R. S. is headed by a manager and is divided for administration into divisions (each corresponding roughly to a typical short division on a civilian road), each of which is headed by a superintendent commanding a railway operating battalion. Heavy repairs and construction of rolling stock is handled for a group of divisions (grand division) by a separate railway shop battalion. New construction of line is performed by the regular Army Engineers. Subordinate positions correspond generally to those of a standard railroad but are adapted to the special needs of the military. No provision is made for financial, legal and accounting departments, for example. The Quartermaster Corps cares for purchases and supplies. The military wrecking-master is more important than his civilian counterpart because, besides the duty of clearing wrecks, it is his function to prepare demolition plans when the battalion is ordered to destroy its own railroad facilities to slow-up the enemy.

Importance of railroads is stressed by the manual in a statement to the effect that "railways, when uninterrupted, are superior to any other form of land transportation for the movement of large quantities of supplies and troops over distances greater than about 75 miles. Their location may be of great strategic significance and many countries have located their railway lines with their use in military operations as the primary consideration." Bearing directly on current argument over the proposed St. Lawrence Seaway is its observation that "the capacity of inland waterways may be reduced by ice or by drought"; that "canalized streams are vulnerable on account of damage that may be caused by destruction or disablement of lock structures and gates or appurtenant dams."

The manual covers in brief the special problems and techniques of a military railway. Among the most important units of its organization is the so-called regulating station, commanded by an officer reporting directly to General Headquarters, who, in effect, lays out the work for the M. R. S. to perform. Each station generally serves an area co-incident with army areas of the combat zone. A typical operating practice of the military

railway arises from the necessity of moving units of troops and their equipment together. This is the operation of "type trains" consisting of, for example, 11 box cars, 17 flat cars, 1 coach and 1 caboose, which are made up standard and held at convenient points. Characteristic of special adaptation to military needs is the manual's dictum that the ordinary round-house is to be avoided as far as possible because it is easily recognized by enemy bombers and is rendered useless when its turn-table is put out of commission.

The railway operating battalion, as described in the 45-page manual bearing that title, is the basic railway unit and may be assigned to a division (railway, not tactical) or to a regulating station. It is divided into: (1) headquarters and service company; (2) medical detachment; (3) transportation company; (4) maintenance of way company; and (5) maintenance of equipment company (running repairs only). A list of rela-

Army Railroad Jobs and Civilian Counterparts

Company	Designation	
	Military	Civilian
Headquarters, and headquarters and service	Battalion commander	Division superintendent
	Second in command	Assistant division superintendent
	Supply officer	Division storekeeper
	Adjutant	Assistant to superintendent
	Commander, train movement section	Chief dispatcher
	Commander, signal maintenance section	Signal supervisor or signal engineer
Transportation	Company commander	Trainmaster
	Platoon commander	Traveling engineer or road foreman of engines
	Second lieutenant	Yardmaster
Maintenance of way	Company commander	Engineer, maintenance of way, or division engineer
	Commander, bridge and building platoon	Supervisor, bridges and buildings
	Commander, track maintenance platoon	Roadmaster or track supervisor
	Second lieutenant	Assistant engineer, maintenance of way
Maintenance of equipment	Company commander	Master mechanic
	Commander, locomotive repair platoon	Engine house or roundhouse foreman
	Commander, car repair platoon	Car builder
	First lieutenant	Mechanical engineer

tions between positions of its officers and those of commercial railroads and a diagram of command jurisdiction accompany this article.

The third manual devotes 43 pages to a description of the organization of the railway shop battalion. The mission of this unit is to accomplish repairs to equipment beyond the capacity of operating battalions and stock and furnish to the latter finished and semi-finished parts. Its organization follows that of the equipment maintenance and design personnel of a commercial railroad organized on the so-called departmental or vertical basis. Normally, the shop battalion limits itself to class 3, 4 and 5 repairs in the theatre of operations and has capacity to complete one-half classified locomotive repairs and repair 4 to 16 freight cars daily.

YARD EMPLOYEES working on the night shift at the Canadian National's Leaside car shops, Toronto, Ont., put their training as fire fighters to good use recently, according to the Canadian National weekly news letter. Laying six lines of hose to avert fire threat from near-by oil and gasoline storage facilities and using a yard locomotive as a pumper, the employees worked side by side with Toronto city firemen in bringing the flames under control.

* War Department "Military Railways and Inland Waterways" (T. M. 5-400); "Railway Operating Battalion" (T. M. 5-405); and "Railway Shop Battalion" (T. M. 5-410).

Communications and Books . . .

Management's Responsibility To Employees

MEMPHIS, TENN.

TO THE EDITOR:

Congratulations on your illuminating common sense editorial "The Responsibility of Management to Employee" in your issue of March 1.

It is a most fitting sequel to your most interesting editorial "Free Enterprise, What It Means to the Practical Railroad Man." Thoughtful, reflective reading on the part of all railroad employees should go a great distance to rid their minds of vexatious questions now torturing them, questions generated by individuals with but a single thought, that of furthering their own selfish interests at the expense of employees to whom they give but one side of the picture of their job.

I write from a background of actual experience of fifty years service with a leading railroad of the Midwest, and who has always found his superiors pre-eminently human and above question in fair dealing. The secret with any employee and his employer is intense loyalty and unstinted service.

I believe the current editorial opportune and deeply vital and worthy of re-publication in pamphlet form, and may I suggest pocket size, since I feel it will go further.

W. H. TESTER.

The Need for Education Against Subversive Doctrines

DORMONT, PA.

TO THE EDITOR:

The editorials appearing currently in *Railway Age* exposing the evils of Communism are indeed to be commended.

The method to be used in placing this very logical defense of our economic system before the railroad employees is a puzzling one as indicated in the editorial of the February 8 issue. That it must be done, there is no question, but that the message is properly reaching the rank and file, we know to be untrue.

Indeed, "The harvest is large, but the laborers are few." With very few exceptions most responsible railway officers are unacquainted with the seriousness of this insidious poison. They, like many of their employees, regard its symptoms as simple as an attack on religion and therefore easily recognized, but Communism doesn't appear first as a persecutor of religion; its infiltration is far more sinister and is apt to catch many railway officials and employees off-guard.

There are all too few railway men sufficiently informed to intelligently cope with the situation. The Communists are spending millions to pay crafty, brilliant minds to spread their doctrines, while the railroads and other industries are spending, in comparison, a few thousands to educate their personnel against doctrines about which their officers who endeavor to instruct them, know little.

I am convinced that the Association of American Railroads should show the way by regular weekly broadcasts, such as Monsignor Fulton J. Sheen of the Catholic University delivers over the Catholic Hour on the very same subject. These Association of American Railroads exposés of Communism should be printed, following the broadcasts, in every railway employees' magazine in the nation, in order to make doubly certain that the message reaches the greatest number of the railroad gentry.

The personnel of railway public relations and welfare departments are, for the most part, all too sparingly informed and poorly educated to offer sound instruction against the evils of Communism to their fellow employees and hence are of little use, as yet, in this great crusade which your publication is so clearly presenting.

This crusade *must* succeed or America topples from within.

WALTER F. WALTON.

Employees Oppose Seaway; How Did they Vote Last Fall?

BUFFALO, N. Y.

TO THE EDITOR:

Your editorial "Uncle Sam vs. Railroad Employees" in the March 29 issue of *Railway Age* has just come to my attention.

The statistics are very enlightening. I cannot agree, however, with the last sentence of your editorial. Railway employees are very definitely aware of the dangers of unregulated and subsidized competition. In Western New York our League has been functioning for some time and we have been cognizant of the menaces to railroad employees. We have conducted a campaign to educate the public on the subject of canal tolls.

I have spoken at many public gatherings on this subject. We have also taken a very active part in the St. Lawrence Seaway fight. I have addressed many meetings and have spoken over the air on this subject. Some time ago hearings were held before the Army Board of Engineers to determine whether the Western section of the Barge Canal should be improved. I filed a brief on this subject and attended several hearings. I am confident that our opposition had a great deal to do with the decision of the Board of Army Engineers.

A short time ago we were instrumental in bringing about the passage of an ordinance by the City of Buffalo to license and regulate itinerant truckers. I could detail a great many other subjects and matters we have studied and watched. To show you that nothing affecting railroad workers has escaped our attention I would like to tell you about our new Municipal Auditorium. Ordinarily the plans called for oil burning equipment. Our League was instrumental in having the plans changed to the use of coal burning equipment. We felt that the loss of coal tonnage was detrimental to the railroad employee and to the employer as well.

In view of our activities I was somewhat amazed to read the assertion in your editorial to the effect that too few railway employees realize the dangers confronting them. We expect to continue our efforts and our policy to do everything possible to help railroad employees.

In the future we may need the help of *Railway Age* to carry on our work and to publicize the efforts of railroad employees in combating the dangers confronting them. I would like to add in closing that we have had no funds to carry on the many activities we have engaged in but that has not deterred or discouraged us.

CHRISTY A. BUSCAGLIA.

Counsel, R. R. Workers' Protective League of Western New York.

[It was not the point of the editorial referred to by our correspondent that zeal for defense of their jobs was lacking among the rank and file of railroad employees. Quite the contrary, in fact. The question we raised was why railway unions persist in urging their members to vote for politicians who favor uneconomic transportation facilities, designed to throw railroad employees out of work. For instance last fall most of the unions asked their members to vote for Mr. Roosevelt, when they very well knew his intentions regarding this St. Lawrence project.—EDITOR.]

New Book . . .

Fuels and Their Utilization. By A. R. Carr, dean of the College of Engineering, and C. W. Selheimer, assistant professor of chemical engineering, Wayne University, Detroit, Mich. Published by the Pitman Publishing Corporation, 2 West Forty-fifth street, New York. 184 pages, illustrated. 6 in. by 9 in. Price, \$2.

No attempt is made in this book to go fully into thermodynamics, but the various fuels which, in current practice, are available for the production of heat, the means by which they are utilized for this purpose, and modern investigations and tests to increase and maintain efficiency in the production of heat are fully discussed, with particular attention to both principles and applications. Fuels, both liquid and solid, are classified, and their properties and characteristics described. Chapter 11 is devoted to laboratory experiments.

NEWS

I. C. C. Hears Red Cap Case Argued

R. R. counsel alleging collusion between red caps and complainant, asks dismissal

The question of whether the Interstate Commerce Commission has the power to regulate the charges collected for the carriage of hand luggage by Red Caps at the union passenger station in Cincinnati, Ohio, was orally argued before that body on April 4. As pointed out in the *Railway Age* of February 1, page 261, Examiner Claude A. Rice had found, in a proposed report, that the commission had no such power "except to the extent necessary to prevent violations of the rebate and discrimination provisions, embodied in section 2 and 6 (7) of the Interstate Commerce Act."

The case had come to the commission in the form of a complaint filed on April 24, 1940, by one Ida M. Stopher, a resident of Cincinnati, in which she alleged that Red Caps are instructed by the terminal company in that city to collect a charge of 10 cents for each bag carried; that the charge is not uniformly applied; that the collection of the charge is not authorized by tariff publication, and for that reason is illegal; and that the charge is unjust, unreasonable, unjustly discriminatory, unduly prejudicial and preferential, in violation of the Interstate Commerce Act.

M. J. Myer and Leon Despres, counsel for the complainant, told the commission that the railroads have always maintained that the Red Cap service was included in the cost of a railroad ticket. They cited evidence to show that the New York Central, in inaugurating Red Cap service in the 'Nineties, made it clear that the service was free to its patrons and that tips should not be given. They also argued that the 10-cent charge has materially impaired the relationship of the Red Caps to the public.

The case for the station company was argued by John H. Clippinger and L. A. Weekley. Mr. Clippinger contended that the Red Caps, who had joined in the suit, were attempting to get the commission to outlaw the 10-cent charge so that they would get their minimum hourly wage of 36 cents under the Fair Labor Standards Act and also whatever tips they could collect.

Commissioner Alldredge asked Mr. Clippinger why the terminal company had not

G. M. & N.—M. & O. Mating Bring Benefits

Merger of the Gulf, Mobile & Northern and the Mobile & Ohio into the Gulf, Mobile & Ohio in September, 1940, has already brought benefits to the properties, according to the annual report of the unified company for 1940. Although the full economies obtainable will not be reached until some time has elapsed, "since it is the policy of the management to minimize . . . any hardships to the personnel of the company," some of the anticipated benefits, such as the longer haul over the constituent properties of traffic originated by them and formerly delivered to other connections, have already been realized. Among improvements resulting from unification, through passenger trains on the former M. & O. have been completely modernized and schedules materially shortened. The report states that "the improved service is practically self-sustaining, while the former trains were operated at a large loss."

published the 10-cent charge made by Red Caps for carrying each bag. The railroad counsel replied that the company felt that the publishing of such a charge would establish a precedent that would hamper the operation of the station. He also asked the commission to dismiss the complaint on the ground that it was a result of collusive action on the part of the complainant and the Red Cap union.

President Signs Independent Offices Bill

President Roosevelt has signed the Independent Offices bill which carries appropriations for the Interstate Commerce Commission and the grade crossings elimination work of the Public Roads Administration of the Federal Works Agency for the fiscal year ending June 30, 1942.

Under the bill as enacted into law, the commission will receive \$9,058,750, which is exactly the same amount it received for the current year, but \$61,500 under the \$9,120,250 requested for the agency by the President and the Bureau of the Budget at the opening of this session of Congress.

The amount allocated to the elimination of grade crossings is \$10,000,000, a reduction of \$15,000,000 over that appropriated for the current fiscal year.

Ditch Schemers Have Busy Week

Roosevelt has session with Gov. Lehman and other tax-paid seaway propagandists

President Roosevelt's April 7 conference with Governor Lehman of New York was the only administration move this week in connection with the proposed St. Lawrence development. With the House of Representatives on an Easter vacation and the Senate operating through a series of three-day recesses on virtually a no-business basis, the legislation designed to make effective the United States-Canadian St. Lawrence agreement has not yet been submitted to Congress.

It is understood that the President's conference with Governor Lehman had to do with New York state's role in connection with the hydro-electric power phases of the St. Lawrence project; Governor Lehman was accompanied by James C. Bonbright, chairman of the New York State Power Authority, and Leland Olds, chairman of the Federal Power Commission. Asked about the meeting at his April 8 press conference, the President said that the next two weeks were going to comprise the study stage of the power project. At his previous press conference, on April 4, Mr. Roosevelt had got in an indirect plug for the proposed seaway in discussing his announcement of plans for the construction of ships and ship ways under the lease-lend program. He was asked if the ship ways would be located on the seaboard, and replied that unfortunately they would necessarily have to be so located.

Meanwhile another pamphlet in opposition to the seaway has come from the National St. Lawrence Conference. An accompanying statement from Executive Director Tom J. McGrath described the pamphlet (entitled "Two ways for Farmers to Lose Money!") as one which "clearly demonstrates the fact that the farmers of the country have very little to gain by the building of the waterway and in fact may lose by it." The booklet examines claims of "savings" on the transportation of grain, pointing out that when the railroads cut their rates in 1929 at the request of former President Hoover, "the world prices fell—and domestic prices fell too, so farmers got less for their crops." It is next asserted that "what happened then can happen again;" and the booklet goes on to point out that "ships come in as well as go

out." The latter would mean "more foreign competition and still lower prices."

Congressional discussions and extensions of remarks on the St. Lawrence continue to turn up in virtually every issue of the Congressional Record. Among other protests was the letter which Senator Lodge, Republican of Massachusetts, received recently from Governor Saltonstall of that state. In the House on April 3, Representative O'Brien, Democrat of Michigan, made a statement designed to bring before his colleagues "the defense aims of this great project, its peacetime utility, and to answer those who challenge its need and practicality." Mr. O'Brien is the sponsor of H. R. 4163 and House Concurrent Resolution 23, both of which have as their object the acquisition by the United States of that part of Canada lying between the Northern boundary of the United States and the Southern bank of the St. Lawrence. The former measure would have the acquisition made under the lend-lease bill, while the latter would have the President negotiate for the outright purchase of the territory involved. Enactment of this legislation, Mr. O'Brien said, would obviate one criticism "that has legitimacy," i. e., that "that the greater portion of the seaway is along waters that are completely controlled by a foreign government."

Asserting that it was "defense" measures that brought about the building of the Panama Canal and the establishment of the Tennessee Valley Authority, Mr. O'Brien is confident that the Great Lakes-St. Lawrence seaway "will experience the same history—defeated in peacetime, we will unite on this great defense measure and complete it."

Proposed Railroad Retirement Act Amendment

Another bill (H. R. 4292) to amend the Railroad Retirement Act to exempt "certain State owned and operated carriers and employees of carriers" has been introduced in the House of Representatives by Representative Byrne, Democrat of New York.

Congress Passes Bill to Extend Bituminous Coal Act

The Senate on April 4 passed the House-approved H. R. 4146, thereby completing Congressional action on this bill to extend for two years from April 26 the provisions of the Bituminous Coal Act of 1937, the so-called Guffey Coal Act.

I. C. C. Appoints Frank E. Mullen Assistant Chief Examiner

Frank E. Mullen, head examiner for the Interstate Commerce Commission, has been appointed assistant chief examiner, succeeding Charles F. Gerry, who retired from active service March 31. Mr. Mullen has been an examiner on the commission's staff since July, 1920.

N. Y. R. R. Club to Hear Young Railroaders

"Younger Railroad Men's Night" will bring to the New York Railroad Club at the Engineering Societies building, New York, on Thursday, April 17, a series of short talks by seven young men employed in the railroad business. Coming from

New Haven Directors to Protest Plan's Treatment of Stockholders

The annual report of the New York, New Haven & Hartford for 1941 emphasizes the opinion of its directors that the plan of reorganization for it certified by the I. C. C. is "unwarranted and unfair" in preventing participation by stockholders in any future prosperity of the property. It is stated therein that the directors "propose to continue to take all possible steps to prevent the wiping out of the interest of the present stockholders."

Specifically they proposed to submit to the court that the I. C. C. has failed to give effect to three important factors bearing on the value of the stockholders' equity:

(1) perpetual lease-holding rights in Grand Central terminal and easement over the New York & Harlem; (2) current improvement in the railroad's earnings and future prospects; and (3) the cancellation of claims of the Old Colony and Boston & Providence against the New Haven.

Operations for 1940 resulted in several new high records, according to the report. Gross- and net-ton-miles-per-freight-train-hour, train-load, cars-per-train and average miles-per-car-per-day were the highest in the history of the road. During the year the road also carried 18,156,843 passengers in and out of Grand Central terminal, New York, the highest number on record.

different occupations and different railroads, the speakers are: Richard D. Agnew, machinist apprentice, Reading; James L. Barngrove, Jr., Research department, New York, New Haven & Hartford; S. M. Garrigues, transportation inspector, Lehigh Valley; Glenn J. Hoffman, special agent in purchasing agent's office, Pennsylvania; R. C. Reinhardt, commercial agent, New York, Ontario & Western; W. H. Schmidt, Jr., associate editor, *Railway Age*; and Harter W. Williams, employment and personal records, Erie.

A group from the Baltimore & Ohio glee club will present a program of choral singing before and after the talks, under the direction of Ivan Servais, conductor, and with Charlotte R. Reed as accompanist. Members of the railroad club are being urged to invite younger men on their staffs to attend the meeting.

P. R. R. to Run 20¼-Hour Coach Train to St. Louis

The Pennsylvania will inaugurate its first high-speed "luxury" all-coach train between New York and St. Louis, Mo., on Sunday, April 27. Named in both directions "The Jeffersonian", the new run will be made in 20 hr., 15 min., each way, substantially duplicating the fastest schedules now in effect. (Running time of the "Spirit of St. Louis" is 20 hr. eastbound, and 20 hr., 20 min., westbound). De-

parture from New York will be at 5:55 p. m., with arrival in St. Louis at 1:10 p. m. Returning, the new coach flyer will leave St. Louis at 12:30 p. m., arriving at New York at 9:45 a. m.

In announcing the new trains on April 6, the Pennsylvania pointed out that they will provide a service generally similar to that of the "Trail Blazer", which has been operating to and from Chicago since July, 1940, and in its first year carried 132,000 passengers. To maintain the daily two-way New York-St. Louis schedules, three complete trains will be required. Latest-type reclining seat coaches will accommodate 56 passengers each and all seats will be reserved. In the dining cars, table d'hôte breakfasts will be served at 50 cents, luncheons at 65 cents, and dinners at 75 cents. For the 1051-mi. journey between New York and St. Louis, the one way fare will be \$21.15 and the 60-day round-trip fare \$31.75.

Representation of Employees

The National Mediation Board has certified that the Brotherhood of Locomotive Engineers has been duly designated to represent locomotive engineers employed by the Union R. R. for the purposes of the Railway Labor Act. In a recent election the B. of L. E. beat out the Brotherhood of Locomotive Firemen & Enginemen by a vote of 184 to 66.

D. & H. Advertises Services to Its Stockholders

Attached to the 111th annual report of the Delaware & Hudson for 1940 is a four-page pamphlet illustrating new and improved rolling stock on the road and giving particulars of freight and passenger services and schedules. Stockholders are invited to help "in increasing the business of your company" by using its facilities and playing the role of amateur traffic solicitors.

Trans-Missouri-Kansas Board Elects Officers

The Trans-Missouri-Kansas Shippers Board has elected the following officers for the ensuing year: Chairman, R. M. Nielson, general traffic manager of William Volker and Company; alternate chairman, W. T. McArthur, executive secretary of The Kansas-Missouri River Mills; vice-chairman, H. J. Goudelock, executive secretary of the Midwest Coal Traffic Bureau; general secretary, E. F. Ledwidge, general traffic manager of the Granite City Steel Company; and secretary, G. G. Schwinn.

Kendall on Fines for Elkins Act Violations

Because of his belief that "all roads may wish to have this information that any action thought to be necessary may be taken," W. C. Kendall, chairman of the Car Service Division has advised railroad transportation officers of recent fines imposed upon railroads and shippers for violations of the Elkins Act.

Mr. Kendall's comment was contained in a circular dated April 7, and it mentioned recent press reports to the effect that the federal court for the Western Dis-

trict of Louisiana "has imposed fines of \$5,000 each against two Southwestern railroads, and of \$1,000 each against two shippers, by reason of the failure of the carriers to observe and apply the provisions of Rule 34 of the Consolidated Classification" in furnishing cars to the shippers. Also, the report was said to have indicated that eight railroads had pleaded guilty in the federal court for the Southern District of Texas "to similar violations of section 1 of the Elkins Act," and had been "fined a total of \$31,900."

Rates on Dairy Products in the Northwest

The Interstate Commerce Commission, Division 3, has made public a report making several findings with respect to motor carrier rates on dairy products in the Northwest. While the report also covers several related investigation and suspension proceedings, the title case is No. MC-C-98, the investigation by the commission on its own motion "into the lawfulness of rates, charges, rules, regulations, and practices applicable to the transportation of butter, eggs, cheese, dressed poultry, casein, dried and powdered milk, buttermilk and flaked milk from points in Western Minnesota, North Dakota, and South Dakota to Minneapolis, Minn., St. Paul, Duluth, Superior, Wis., Milwaukee, and Chicago.

Terms of Passenger Pool Revised

The Interstate Commerce Commission, Division 3, has approved a revision of the contract covering the pooled passenger revenue and service of the Chicago & North Western and the Chicago, St. Paul, Minneapolis & Omaha, and the Minneapolis, St. Paul & Sault Ste. Marie (operating the Wisconsin Central) between Duluth, Minn., Superior, Wis., and lake-region points, and Chicago, Ill., and Milwaukee, Wis. The new arrangement, retroactive to January 1, 1940, came about as a result of the Soo's discontinuing through passenger service between Duluth and Superior, on the one hand, and Milwaukee, on the other; hereafter the Soo will receive 22 per cent instead of 24 per cent of the pooled revenues and the North Western-Omaha will receive 78 per cent instead of 76 per cent.

Recess of Mediation Meetings on Vacations Demand

After a series of sessions extending over more than two weeks, the National Mediation Board meetings with labor and management representatives on the demand of 14 non-operating unions for vacations with pay were recessed at the end of last week. The recess was described at the Mediation Board offices as a temporary postponement by mutual agreement; and it was also said that meetings would soon be resumed.

Meanwhile there has been no announcement as to the status of the controversy, or as to what progress, if any, is being made by the Board in its mediation efforts.

Midwest Board Meeting

The ability of the railroads to meet any transportation demand which may arise from the national defense program or from the regular increase of commercial traffic was discussed at the spring meeting of the

Mid-West Shippers Advisory Board at Evansville, Ind., on April 3. Particular emphasis was placed upon the necessity for the maximum use of equipment by loading to capacity and the need for the complete unloading of cars so that reloading will not be delayed while bracing and other material is being removed.

A special feature of the meeting was a conference on perfect shipping at a noon luncheon sponsored by the Chamber of Commerce and the Transportation Club of Evansville. W. J. Williamson, general traffic manager of Sears, Roebuck & Company, spoke on War on Waste. The next meeting will be held at Green Bay, Wis.

Kendall Suggests Check of Per Diem Agreements

W. C. Kendall, chairman of the Car Service Division, has requested railroad transportation officers to check their respective roads' per diem agreements with short lines and to advise him if such agreements should be modified, "particularly with regard to the storage of cars, free of per diem."

The circular sent out by Mr. Kendall on April 7 pointed out that many existing agreements with short lines "provide for storage on the short line of cars for prospective loading, free of per diem." It went on to say that such a set-up has been economical from an operating standpoint during periods of plentiful car supply; but "with the increased tempo of business throughout the country, it is necessary that all roads tighten up so that the cars held for prospective loading everywhere shall be held at a minimum."

February Locomotive Shipments

February shipments of railroad locomotives totaled 44 as compared with 64 in January and 38 in February, 1940, according to reports from builders to the Department of Commerce's Bureau of the Census. The February, 1941, total included five steam, 34 Diesel-electrics, and five of other types, all for domestic service. Unfilled orders at the close of February totaled 510 locomotives, including 157 steam, eight electric, 261 Diesel-electrics, and 42 of other types for domestic service; and 29 steam, 10 electric, one Diesel-electric, and two of other types for export.

Data supplied by the Car Service Division, Association of American Railroads, on locomotive building in railroad shops show that one locomotive (steam) was thus built in February as compared with one (electric) in January and two (steam) in February, 1940. On March 1 there were on order in railroad shops a total of 24 locomotives, including 19 steam and five electric.

Capital to Have Big Meeting on "Perfect Shipping"

Added impetus will be given to the railroads' Perfect Shipping Campaign on the evening of April 18 when a large meeting of national importance will be held in the gymnasium of Union station, Washington, D. C. Headliners on the program include Sam Rayburn, speaker of the House of Representatives; K. N. Marritt, general sales manager, Railway Express

Agency, and W. C. Kendall, chairman, Car Service Division, Association of American Railroads.

Speaker Rayburn will talk on "Waste in Relation to National Defense"; Mr. Marritt's subject will be "Consider the Customer," and Mr. Kendall will tell of the background and benefits of the drive. "Perfect Shipping," the sound-slide film produced jointly by the Shippers Advisory Boards and the A. A. R., will be shown by B. E. Young, manager of the Railroad section, A. A. R. Public Relations department.

Freight Car Loading

Loadings of revenue freight for the week ended April 5 totaled 683,402 cars, the Association of American Railroads announced on April 10. This was a decrease of 108,723 cars, or 13.7 per cent, below the preceding week due to the coal strike but an increase of 80,567 cars, or 13.4 per cent, above the corresponding week last year and an increase of 148,450 cars, or 27.8 per cent, above the comparable 1939 week.

As reported in last week's issue, the loadings for the previous week ended March 29, totaled 792,125 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading			
For Week Ended Saturday March 29			
Districts	1941	1940	1939
Eastern	180,563	139,771	137,786
Allegheny	180,620	127,741	121,144
Pocahontas	56,560	46,468	38,716
Southern	122,950	101,473	96,404
Northwestern ..	84,202	73,225	69,589
Central Western	114,308	95,312	93,371
Southwestern ..	52,922	44,931	43,681
Total Western Roads	251,432	213,468	206,641
Total All Roads	792,125	628,921	600,691
Commodities			
Grain and grain products	36,954	34,540	32,080
Live stock	10,395	9,589	10,774
Coal	168,827	127,929	101,209
Coke	13,785	8,540	5,991
Forest products	40,025	31,930	27,110
Ore	16,502	10,175	9,108
Merchandise l.c.l.	161,119	147,305	157,419
Miscellaneous ..	344,518	258,913	257,000
March 29	792,125	628,921	600,691
March 22	768,508	620,375	601,948
March 15	758,693	619,388	591,166
March 8	741,922	620,596	588,426
March 1	756,670	634,636	594,424
Cumulative Total, 13 Weeks ...	9,382,201	8,170,530	7,548,251

In Canada.—Carloadings for the week ended March 29 were 57,516, compared with 56,090 in the previous week and 43,567 a year ago, according to the summary of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
March 29, 1941	57,516	31,937
March 22, 1941	56,090	29,749
March 15, 1941	58,131	30,474
March 30, 1940	43,567	24,927
Cumulative Totals for Canada:		
March 29, 1941	700,339	374,094
March 30, 1940	604,480	314,045
April 1, 1939	530,026	275,849

Traffic on the Tennessee

Data to show how the "improved Tennessee river has already developed important new long-haul freight traffic in petroleum products, grain, pig iron and automobiles," were discussed in the House of Representatives on April 3 by Repre-

sentative Starnes, Democrat of Alabama. Such traffic, Mr. Starnes said, has come before the development of "general use terminals," and he predicted that when more public money is spent on such facilities and additional channel work "the improved Tennessee will be capable of handling a minimum of 10,000,000 tons of freight a year."

On the basis of preliminary estimates, Mr. Starnes said the 1940 traffic on the Tennessee was more than 2,000,000 tons, an increase of 90 per cent above 1939's 1,115,000 tons. The breakdown of the 1940 tonnage through November shows that more than 1,600,000 tons consisted of gravel, sand and stone. Meanwhile there were 77,011 tons of gasoline and 75,894 tons of railroad ties, the next largest items.

As to the aforementioned "general use terminals," Mr. Starnes told of a movement to provide them under a plan which contemplates financial aid from the states of Tennessee and Alabama. The Tennessee Valley Authority is cooperating "in technical and advisory capacities." T. V. A. covers the river transportation situation in a weekly traffic bulletin, recent issues of which were reproduced in the Congressional Record in connection with Mr. Starnes' speech.

March Employment 6.44 Per Cent Above 1940

Railroad employment increased another 2.01 per cent—from 1,029,710 to 1,050,373—during the one-month period from mid-February to mid-March, while the March total was 6.44 per cent above that for March, 1940, according to the Interstate Commerce Commission's compilation based on preliminary reports. The index number, based on the 1935-1939 monthly average as 100 and adjusted for seasonal variation, stood at 105.9 for March, as compared with February's 104.9 and March, 1940's 99.5.

March employment in all groups was above both the previous month and March, 1940. The increases as compared with the previous year ranged from 1.44 per cent in the group embracing executives, officials and staff assistants to 8.14 per cent in the maintenance of equipment and stores group; employment in train and engine service was up 7.51 per cent. The largest increase as compared with the previous month was the 3.75 per cent rise in the maintenance of way and structures group, which group was also up 6.47 per cent as compared with the previous year.

I. C. Suburban Service Carried 28,652,963 Passengers in 1940

An illustrated report which the Illinois Central has made to its employees shows that 28,652,963 passengers were handled in its suburban service in Chicago in 1940. This compares with 35,991,130 handled in 1929 and 22,309,110 carried in 1935. Revenues in 1940 amounted to \$3,443,488 and expenses, including taxes, to \$3,003,036, leaving a profit of \$440,452, the equivalent of only about one per cent of the investment.

On the average, the report continues, there are 32 passengers carried in each car, or 114 on each train. In 1940 there were

78,287 passengers carried every day on the average, including Sundays and holidays.

Present scheduled operations consist of 456 suburban trains on each week day and 289 on each Sunday and holiday. Between 5 p. m. and 6 p. m. every week day, 71 suburban trains are handled into and out of the Randolph Street terminal, an average of one every 51 seconds.

There are 658 employees in the suburban service alone. This includes 67 motormen, 190 trainmen, 177 ticket agents, gatemen and other station employees and 203 equipment maintainers. In addition, many other employees on the track, in the offices and elsewhere are employed partly in the suburban service and partly in other work.

February Accident Statistics

The Interstate Commerce Commission on April 7 made public its Bureau of Statistics' preliminary summary of steam railway accidents for February and this year's first two months. The tabulation, which is subject to revision, follows:

Item	Month of February		2 months ended with February	
	1941	1940	1941	1940
Number of train accidents	615	607	1,290	1,371
Number of casualties in train, train-service, and non-train accidents:				
Trespassers:				
Killed	104	110	216	209
Injured	104	101	220	199
Passengers on trains:				
(a) In train accidents*:				
Killed .....	..	..	..	1
Injured	27	30	182	206
(b) In train-service accidents:				
Killed	125	114	272	262
Injured	86	76	161	166
Travelers not on trains:				
Killed	1	1	1	1
Injured	53	38	107	108
Employees on duty:				
Killed	1,472	1,390	3,093	3,271
Injured	190	166	398	367
All other non-trespassers**:				
Killed	601	599	1,279	1,328
Injured	348	315	723	687
Total—All classes of persons:				
Killed	2,415	2,310	5,207	5,432
Injured				

* Train accidents (mostly collisions and derailments) are distinguished from train service accidents by the fact that the former cause damage of more than \$150 to railway property.

** Casualties to "Other non-trespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties for all classes of persons, including both trespassers and non-trespassers, were as follows:

Persons:				
Killed	176	154	372	351
Injured	459	454	943	1,037

Nickel Plate Loses High Court Action

The United States Supreme Court, at its April 7 session, by a four to four vote affirmed a decision of the Supreme Court of New York in the case of the New York, Chicago & St. Louis Railroad Company versus Frank, an action brought to recover on overdue interest coupons attached to bonds issued by the Northern Ohio, consolidation of which with other railroad companies resulted in the formation of the defendant railroad company.

By its divided decision the court held in effect that approval by the Interstate Commerce Commission is not necessary to establish a railroad company's liability on bonds issued by one of two roads which were consolidated in connection with the formation of the defendant company, since

no obligations were "assumed" by the defendant railroad within section 20(a) of the Interstate Commerce Act.

In the present case the New York court had ruled against the Nickel Plate, holding that the Northern Ohio bonds were guaranteed by the Lake Erie & Western, which, with four other companies, were consolidated to form the Nickel Plate. The lower court decision was based on provisions of a New York statute which provides that in consolidations the new road guarantees the securities of the constituent lines.

The Nickel Plate had argued that despite the New York law a consolidated interstate carrier cannot assume obligations of a constituent line's securities without the approval of the commission as required under section 20(a) of the Interstate Commerce Act.

Correction—Red River & Gulf Not in Receivership

The news item entitled "Army to Buy Railroad to Train Operating Battalion," which appeared in the *Railway Age* of March 29, page 581, included an incorrect statement that the road to be acquired by the Army—the Red River & Gulf—"is now in receivership." As Major L. T. Ross, chief, Railway Section, Corps of Engineers, told the House appropriations subcommittee, the road is not in the hands of a receiver; it has been operating right along under the direction of R. D. Crowell, of Long Leaf, La., president and general superintendent.

Club Meetings

The Car Foremen's Association of Chicago will hold its next meeting on April 14 at 8 p. m. at the Hotel LaSalle, Chicago, at which time the United States Steel Corporation's motion picture entitled "Steel—Man's Servant" will be shown.

The Car Department Association of St. Louis will hold its next meeting at the Hotel De Soto, St. Louis, Mo., on May 20 at 8 p. m. W. S. Topping, chief inspector, Bureau of Explosives, will present a paper entitled: "Explosives and Other Dangerous Articles—Transportation Hazards."

The Indianapolis Car Inspection Association will hold its next meeting at the Indianapolis (Ind.) Union station on May 5 at 7 p. m.

Frederick C. Horner, assistant to chairman of General Motors Corporation and formerly manager of the Railroad Service department, will describe the current war transportation situation in Great Britain, with reference to both automotive and railroad operations, before the Metropolitan Section, Society of Automotive Engineers, on April 17 at the Hotel New Yorker, New York. The speaker has recently returned from England on a four-man mission of experts to study civil defense. The meeting is open to outside guests.

The Canadian Railway Club will hold its next meeting at the Windsor hotel, Montreal, Que., on April 14 at 8:15 p. m. Terence Sheard, executive assistant, Department of Natural Defense for Air, Ottawa, will present a paper on "Canada and Air Force Training."

The New England Railroad Club will

hold its annual banquet and entertainment at the Hotel Statler, Boston, Mass., on Tuesday, May 13. The date was erroneously stated as May 18 in last week's *Railway Age*.

The Toronto Railway Club will hold its next meeting at the Royal York hotel, Toronto, Ont., April 28, at 7:45 p. m. K. N. Merritt, general sales manager, Railway Express Agency, will discuss the subject "Transportation and the Nation."

Still No Committee Action on Transport Board

The Senate committee on interstate commerce, when this issue of *Railway Age* went to press, had taken no action on President Roosevelt's appointments to the transport-study board called for in the Transportation Act of 1940. The names of the three nominees—Wayne Coy, Charles West, and Nelson Lee Smith—were sent to the Senate by the President on March 20.

While there have been published reports that protests have reached the point where consideration is being given to withdrawing the appointments, it is understood that there is nothing yet in the Senate committee files

to support such a statement. The file was not available for inspection, but it has been learned that only a few letters, some expressing approval and others objecting, have been received. The aforementioned reports spoke of railroad protests, but it was stated at the offices of the Association of American Railroads that the Association had made no protest, nor was it aware that any had been made by individual lines. Also, one member of the Senate committee stated that his office had received no correspondence bearing upon the appointments.

As indicated in last week's issue the delayed committee action has been due in the main to requests in that connection from members who were away from Washington, with the sub-committee, which is investigating a proposed Denver & Rio Grande Western branch-line abandonment in Colorado. Also, the Senate this week was on an Easter-vacation schedule calling for a series of three-day recesses.

Three Fast Trains to be Added Between Detroit and Chicago

Three fast passenger trains, the Michigan, the Red Bird and the Chicago Arrow,

will be placed in service on April 27 between Detroit, Mich., and Chicago by the Michigan Central and the Wabash-Pennsylvania. The Michigan Central's Michigan, consisting of reclining coaches, a parlor car, a diner-lounge car and an observation-lounge car, will operate on a 5-hr. schedule, leaving Detroit daily at 8:15 a. m. Eastern time, and arriving in Chicago at 12:15 p. m. Central time. It will stop at Ann Arbor, Jackson, Battle Creek, Kalamazoo, Niles and Sixty-third street in Chicago.

The Red Bird of the Pennsylvania-Wabash, will operate on a schedule of 4¾ hr. It will leave Chicago at 9:15 a. m. Central time and will arrive in Detroit at 3 p. m. On its return trip the Red Bird will replace train No. 7, the Detroit Arrow, leaving Detroit at 5 p. m. instead of 4:25 p. m. Eastern time and arriving in Chicago at 8:45 p. m. instead of 8:10 p. m. Central time. The Chicago Arrow will leave Detroit at 8:25 a. m. Eastern time and will arrive in Chicago at 12:25 a. m. Central time.

The Red Bird will feature attractive accommodations for both coach and Pullman chair patrons. The head car will have 24 Pullman chairs and lounge facilities for the passengers in this car, as well as for those in the adjoining 30-seat chair car.

On the rear of The Red Bird will be an observation-lounge-buffet car of the "Trail Blazer" type for the use of coach passengers. In the observation lounge section of this car will be restful arm chairs for 31 passengers, while 16 more will be accommodated at tables in the buffet. Immediately ahead of the observation car will be a coach with 68 reclining seats, separately adjustable in three positions and reversible. The dining car will be in the center of the train.

Keeping British Roads Running

British railroad operating staffs have been ingenious in their efforts to maintain essential freight and passenger services and to devise temporary alternative routes. Colonel C. M. Turner, general traffic manager, Associated British & Irish Railways, tells a few stories of the resourcefulness with which London & North Eastern stationmasters, inspectors, yardmasters, enginemen, firemen, signalmen, porters, and the less well known control office staffs have tackled problems caused by aerial attack.

On two days in recent weeks bomb damage close to a London & North Eastern main line in the London area necessitated the use of a North London suburban station as a terminal for all passenger trains, while fish, meat and other freight traffic was handled at adjoining stations. Ticket office staffs with stocks of pasteboards were rushed out to the temporary terminal station, passengers were transferred by emergency bus service and their baggage by trucks put at the disposal of the railroad by the military forces. The famous "Flying Scotsman" express, though delayed, ran as usual, except that for the first time in its long history of 78 years, it did not leave from platform No. 10, Kings Cross.

On another occasion, bomb damage at night cut London & North Eastern lines in the eastern suburbs, with the result that



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"No Sidings For the Limited"

trains destined for the city over the route affected could not proceed beyond an inner suburban station. Nor could emergency bus services be arranged, for the alternative road route had also been bombed. However, by restoring damaged tracks that connected with a branch line to a suburban station on another route into London and reversing trains at that station, the service could be resumed. In less than 10 hours, the necessary repairs had been effected by the engineers; while to reduce the time of turn-around to a minimum, operating staffs had mobilized sufficient locomotives and crews for the working of the trains back to London as fast as they arrived at the suburban station.

Unions Protest M. & St. L. Decision

The Railway Labor Executives Association and the Brotherhood of Railroad Trainmen have asked the Interstate Commerce Commission to reopen the recently-decided Minneapolis & St. Louis case, details of which were given in the *Railway Age* of March 15, page 459, for rehearing, reconsideration and reargument.

Although the commission in its opinion in the M. & St. L. case reserved decision on the labor-protection phase in order that it might, if conditions warranted it, later impose labor-protection provisions required by the so-called Harrington amendment to the Transportation Act of 1940, the brotherhoods declare in their petition that the present arrangement "does not constitute a fair and equitable arrangement to protect interests of railroad employees who may thereafter be affected by the removal of the shops, or by any other change in the conditions of employment which respective petitioners may make in the furtherance of the plan."

According to the brotherhoods the commission believes that it need not impose labor conditions if it thinks the employees will not be adversely affected. After pointing out that this is the third recent case in which the commission has taken this position, the petition goes on to say that the employees disagree with this interpretation and would like the privilege of arguing the question before the whole commission.

Later in the week the state of Minnesota and the Minnesota Railroad and Warehouse Commission, acting under a mandate from the legislature, asked the commission to reopen the case for rehearing, reconsideration, and reargument.

U. S. Chamber Committee Reports on Freight Forwarders

Consideration of the freight-forwarder question has led the Transportation and Communication Department Committee of the Chamber of Commerce of the United States to the general conclusions "that legislation at this time should be limited to measures to continue present forwarder operations pending a further investigation and that Congress should make provision for such investigation by the Interstate Commerce Commission embracing the whole problem of handling less-than-carload or merchandise freight." In other words the committee favors something in the nature of "stop-gap" forwarder legislation which would continue existing for-

warder-truck arrangements by permitting the carriers to publish "special rates for the type of service required by forwarders, such rates also to be available to anyone else in a position to utilize the services as part of a through movement."

Present truck-forwarder arrangements are now covered in the main in forwarder tariffs which the commission has ordered stricken from its files. The commission orders in that connection, which will require the discontinuance of the joint arrangements, are now set to become effective July 1.

The present report of the Transportation and Communication Department Committee has not been acted upon by the membership of the Chamber; and until such vote is taken at the forthcoming annual meeting it "rests solely upon the authority of the committee presenting it." In order to facilitate the I. C. C. investigation of forwarding which it recommends the committee would have the "stop-gap" legislation require forwarders "to obtain licenses from the commission and to keep such records and furnish such reports as the commission may prescribe."

Meanwhile, Chairman Lea of the House committee on interstate and foreign commerce has not yet appointed the sub-committee which he plans to name for the purpose of shaping forwarder regulation for recommendation to the House. The sub-committee will have before it Chairman Lea's bill, H. R. 3684, on which public hearings were recently concluded; and S. 210, the Senate-approved bill sponsored by Chairman Wheeler of the Senate committee on interstate commerce and Senator Reed, Republican of Kansas.

The Illinois Central Reports to Its Employees for 1940

The fourth annual report of the Illinois Central to the members of its "family" is a discussion of progress made in 1940 and of prospects for 1941 by J. L. Beven, president. In the report, Mr. Beven called upon the head of each major department to describe that department's accomplishments in 1940.

Mr. Beven concludes the report by saying: "Our eyes were focused on the probable demands of 1941, 1942 and 1943, and in taking steps to prepare ourselves we spend generously for the upkeep and improvement of the property. While in round figures we took in three million dollars more than in 1939, we spent four million dollars more than we did in 1939, and we ended the year a million dollars worse off than we did in 1939. The result was that we cut in two our net earnings, as compared with 1939. Going back two years for another comparison, we find that on \$117,000,000 worth of business in 1940 we had left for the ownership only a few more dollars than we realized on \$108,000,000 worth of business in 1938. It is hardly necessary to say that no dividend was declared in 1940. That leaves our stockholders without direct monetary return for the ninth consecutive year.

"However, in comparison with our last preceding \$117,000,000 worth of business—that in 1937—we came out better than might have been expected. A comparison

of 1940 with 1937 is worthy of special attention because total revenues for the two years were almost exactly the same; yet the excess of revenues over expenses in 1940 was more than two and one-half times that recorded for 1937. That brings up the question of what happened to expenses. As compared with 1937, payrolls were up in 1940; so were material charges and taxes. The two items that went down enough to produce the improved showing in 1940 were rents and interest, the former declining more than a million and a half dollars, the latter nearly seven hundred thousand dollars, the combined total decrease being more than two and a quarter million dollars. This improvement reflects not only some conscious effort by the management but also the influence of lower interest rates generally and the betterment in our car situation resulting from purchases and repairs."

Claims Unequal Freight Rates Handicap West and South

The restoration of equality of opportunity by a correction of inter-territorial rate discriminations was advocated by David E. Lilienthal, director of the Tennessee Valley Authority before the third annual transportation conference of the University of Nebraska at Lincoln, Neb. on April 7. Such action, he continued, "would not only be beneficial to the South and the West, would not only tend to conserve natural resources, raise purchasing power in those regions, give midwestern and southern business men an opportunity to show the skill and resourcefulness they have, but would be a great regenerative force for the nation. These 'Chinese Walls' of freight rates between sections of our common country have a depressing and sterilizing effect on the whole nation. It is sound economics and sound public policy to remove every barrier to a free flow of commerce within the United States."

Mr. Lilienthal's discussion of the effects of interregional rates was based upon the relation of the level of class rates in each railroad freight rate territory with the level in Official Territory. His index of relative levels was as follows: Official, 100; Southern, 139; Western Trunk-Lines, 147; Southwestern, 175 and Mountain-Pacific, 171.

"These interregional freight rates," he continued, "deprive the interior regions of the country of an opportunity to develop their natural resources through manufacturing on an equal footing with the more highly industrially developed region east of the Mississippi and north of the Ohio. As a consequence, the whole nation suffers.

Mr. Lilienthal used several examples to demonstrate the "inequality of interterritorial freight rates." One involved a shoe factory in Topeka, Kan., bidding against a factory in Brockton, Mass., for a 10,000-lb. order of shoes in Mansfield, Ohio, which is equally distant from both factories. In this case, he said, the rail distance is the same but the freight charges to be paid by the dealer will be \$141 if he buys from the Brockton factory or \$196 if he purchases from the Topeka factory. The \$141, he said, would only transport the shoes from Topeka to Springfield, Ill., which is less than half way to Mansfield. The dealer or

IT WILL NEVER BE SEEN BY THE PUBLIC
... yet no other part will have a higher finish



The public looks at the outside and is satisfied if appearances are pleasing, but you can't fool steam. That is why all working parts of Lima locomotives are built with such careful adherence to exact dimensions and specifications. It is through such attention to detail, that Lima has earned for itself its enviable reputation as a builder of long-life, economical power . . . Power that not only looks good outside . . . but looks even better inside where it counts.

LIMA LOCOMOTIVE WORKS



INCORPORATED, LIMA, OHIO

the Topeka factory pays 40 per cent more for the same distance.

Another example entailed a paint factory in Detroit, Mich., and one in Omaha, Neb., quoting a prospective purchaser in Peoria, Ill., which is equi-distant from both points, on a carload of paint. In this case, he said, the carload of paint costs \$39.60 or 29 per cent more from Omaha than from Detroit. The \$136.80 charge from Detroit to Peoria would only carry the Omaha paint to Ottumwa, Iowa, or 167 miles short of Peoria. "This," he concluded, "means that the Omaha paint manufacturer can secure that Peoria order only if he can somehow make up the \$39.60 out of his own pocket or the pay envelope of his employees. Lower wages mean lower purchasing power.

"The Southeast suffers under the same kind of rate handicaps. Chattanooga, Tenn., and Auburn, N. Y., are the same distance from Ft. Wayne, Ind. But for the amount of transportation charge which will carry a carload of agricultural implements weighing 24,000 lb. from Auburn, to Ft. Wayne, a carload from Chattanooga will get only to Lexington, Ky. To cover the rest of the distance, the charge is \$48 or 43 per cent more than that incurred by the producer in the low-rate region. The largest national market is concentrated in Official Territory. Industries or prospective industries in your region must sell a part of their output east of the Mississippi river in Official Territory if you are to create a robust industrial development. In much of this market in Official Territory your industries expect to have to pay higher transportation charges, simply because your goods must move greater distances. In other words, there is a large part of this concentrated market that is too far from Mid-Interior manufacturers even if the Mid-Interior producers were granted parity mile for mile in their freight rates. You are out of that market, or most of it.

"But what of that part of this great market that you are closer to than producers enjoying Official Territory rates? The astounding fact is that as a result of the interregional rate system, your producers here are actually required to pay a higher rate than manufacturers in Eastern territory who are farther away from the market. If the freight rate differential were removed your industries could enjoy a much larger share of the markets in Official Territory than at present.

"If the purchasing power in the United States were distributed evenly over the entire country, it would be a handicap to you if you were required to pay a greater freight rate per mile than was exacted of some other region. In view of the actual concentration of purchasing power, the differential against you is a burden almost fatal to the decentralization of American industry.

"I am not advocating, and no one I know of is advocating that rates be adjusted to offset your disadvantage of distance. The nub of the case against the interregional rate system is that it requires producers in the West, the Southwest and the South to pay more for the same distance; in short, the case is not built upon a desire for favoritism but rather for equality of opportunity.

"A change in the interregional freight

rate situation, however, is not a panacea either for the problems of the Mid-Interior or of the South. I trust that my emphasis upon the importance of this barrier to our future development has not given that impression. There are other equally important matters to concern us. We must not only remove barriers; we must go even further and see that when the walls are leveled and equality of opportunity restored, we will be ready. We must make ourselves ready with industrial knowledge generally, be ready with the skills and with the backlog of industrial research upon which modern industry so greatly depends. This is vitally important to you in this region as it is in the South. If there were time I should like to describe to you what the Tennessee Valley Authority and its co-operating state institutions have actually accomplished in the way of industrial research. That program of research has resulted in new private industry based on materials and skills of the southern region itself. And as recent experience in the Tennessee Valley has demonstrated in a practical way, for industrial development we need too to continue to develop our rivers so that they will furnish us great blocks of cheap electricity as well as water control for navigation, flood control and irrigation. To progress industrially the interior and the South must press for more and more electricity, for we are only on the threshold of the age of power.

"More than this, it seems to me, we must actively support and promote every effort, State and Federal, public and private, strengthening the conservation and wise utilization of our natural resources. We are only as strong as the foundations upon which we stand are strong. Those foundations we find in our soil and minerals and forests and streams and in the skills and energies and spiritual qualities of our citizens."

At the morning and afternoon sessions of the conference, L. C. Sorrell, professor of transportation of the University of Chicago, acted as chairman. During the morning, the round table discussion developed the discriminations alleged to hinder shippers, transportation service, industrial development and regional growth. At a luncheon, Henry A. Palmer, editor and manager of the *Traffic World*, was the speaker. During the afternoon, the carriers defended the rate structure and later all representatives expressed their views on the reconcilableness of the conflicts.

Among those entering the discussion were H. L. Traber, executive general agent of the Missouri Pacific at Kansas City, Mo., who termed attempts to bring rate structures into one mold on a level of uniformity, disastrous, particularly to railroads and industries of the west. He contended that attempts at political rate establishment and maintenance of rates would be painful to all concerned. Austin Sutherland, secretary of the United Transporters of Petroleum Products, presenting truck operators' views, argued that an advancement in equalizing rates could be made if the Interstate Commerce Commission would forget prejudices against the truck industry. E. T. Parks, assistant general freight agent of the Chicago, Burlington

& Quincy at Omaha, declared that every effort is being made by carriers and shippers as well as the various commissions to protect the public interest.

Budd Expects No Transport Difficulties This Fall

"An enlightened study of the present trend of carloadings does not indicate any present danger of serious transportation difficulties of any kind during the peak loading period this fall providing cars are not used for storage purposes," and "all activities" of the National Defense Advisory Commission's Transportation Division "are directed to the prevention of any such misuse." Thus does the April 8 issue of "Defense," official weekly bulletin of the Office for Emergency Management, conclude an article giving Transportation Commissioner Ralph Budd's views of the current situation with respect to transportation and national defense.

After quoting Mr. Budd to the effect that "both the railroad and motor carrier industries are enjoying substantial increases in traffic volume," the article goes on to note the possible effect of the coal strike on loadings, which "may be partially offset" by increased ex-lake iron ore traffic.

Leading up to its closing statements noted above, the article had this to say: "A danger in evaluating the present rail loadings, according to Mr. Budd, is failure to appreciate that later in the year we will be comparing with a level of loadings in 1940 after the defense program got under way which is relatively higher than the 1940 level with which we are now comparing. It is not to be assumed because carloadings at the end of March are approximately 26 per cent over 1940 that they will show a similar percentage increase during the peak period in the fall. The first and second quarters of 1940 were not heavy loading periods.

"The relationship between car supply and demand is constantly a subject of study, and estimates of total loadings received from various sources are being currently reviewed and information given to the railroad industry upon which they can act where necessary to the end that an adequate supply of cars and locomotives may be made available to take care of the peak transportation demand which will be experienced in the fall."

Trucks in Britain to Be Operated by Government

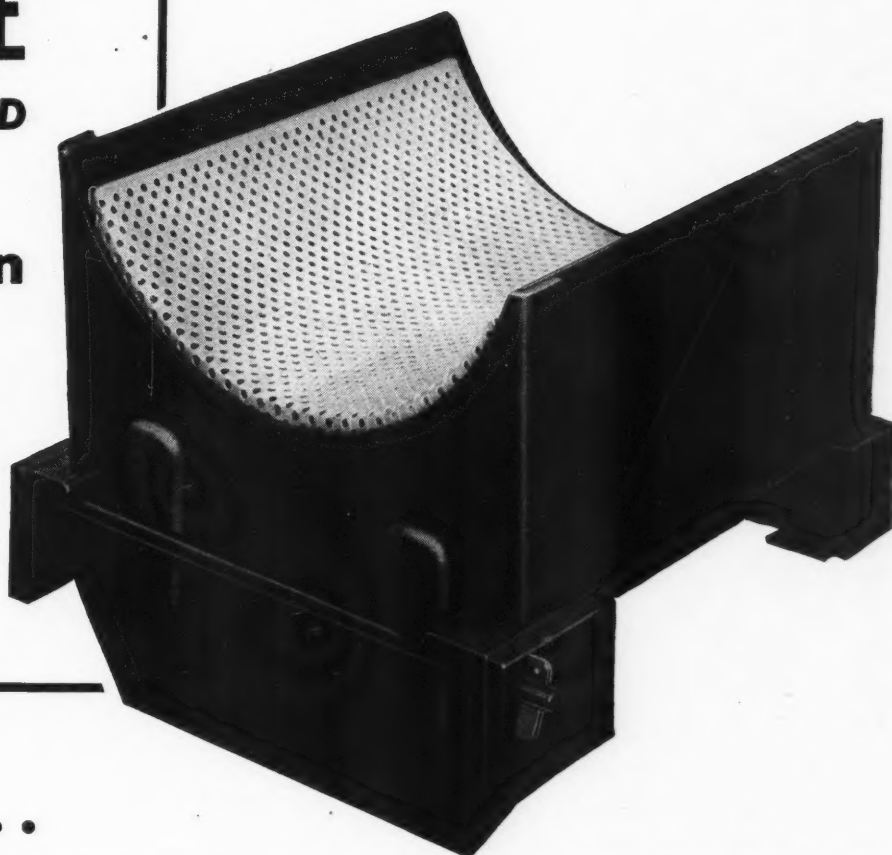
Many students of transportation problems have expressed the opinion that when and if railroads are taken over by the government, nationalization of other forms of transportation follows in due course. Confirmation of this view is given in the recent announcement by the British Ministry of Transport that it will take over the operation of certain highway trucking services as a part of the national war effort. Control of British main line railroads was assumed by the government in 1939 shortly after declaration of war on Germany.

The plan of the ministry is to hire trucks on its own account, to be placed under the control of an official organization staffed partly by government employees and partly

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COST
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with this . . .

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The reversible cellar of the new Franklin No. 8 Combined Lubricator & Spreader weighs less than half of the old cast steel cellar, costs less and induces better maintenance. » » » By reversing, tapered grease cakes may be fully consumed, thus increasing mileage and decreasing the cost of lubrication. Jaws of the driving box cannot close and

pinch the cellar. This results in the cellar having proper clearance in the box at all times. The hub end wall, which is integral with the spreader, brings the perforated plate closer to the hub and provides better hub lubrication. » » » Specify the Franklin No. 8 Combined Lubricator & Spreader for replacements or for new power.



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by experts from the industry, according to "Modern Transport" (London). In most cases the truck would continue to be operated and maintained by present drivers and officers but the ministry would determine the traffic to be hauled and trips to be made. In effect, therefore, the Ministry of Transport would become a forwarding agent for highway traffic.

Although the primary object of the plan is to carry government shipments, it will be necessary to haul some competitive commercial traffic to make possible capacity loads and eliminate empty back-hauls. Payment for vehicles hired permanently will probably be made on the basis of revenue earned by an operator in a standard year, similar to the standard revenue embodied in the plan for government control of the railways.

Since the plan of government control was initiated by the Road Haulage Consultative Committee, representing truck operators, it is apparently believed by them to be the only logical solution to their problems. Thus it follows that nationalization of the railroads, even though it proves to be temporary, gave rise to a situation which demanded nationalization of common and contract carriers on the highways as well. Up to the present time the government has concentrated on the railroads as the principal transportation agency and has, therefore, severely restricted the output of new trucks, replacement parts and motor fuel. This reduction in the number of serviceable vehicles available and restriction of their mileage, coupled with a drastic cut in available non-military traffic, led to formation of pools by existing truckers which, according to "Modern Transport," "are beginning to display features common to ill-regulated monopolies". Rates are becoming "unconscionably high," and certain operators now neglect long-distance traffic in favor of the more remunerative short-haul offerings. Just before the beginning of the war approximately 500,000 motor trucks were operated in Great Britain by 220,000 owners. Of these common and contract carriers owned between them about 150,000 vehicles.

Brake Performance of Commercial Motor Vehicles

Bureau of Motor Carriers brake-performance tests on approximately 1,700 motor vehicles and combinations of vehicles show that Interstate Commerce Commission braking-distance requirements were met by only slightly more than 50 per cent of the tested buses, 42 per cent of the two-axle trucks, a little over 20 per cent of the tractor-semitrailer combinations, and a little over 10 per cent of the truck-full-trailer combinations. The requirement calls for a 30-ft. stop from a speed of 20 m.p.h.

Release of the report on the tests was authorized by the commission's Division 5; but "it is not to be construed as an official expression of the views of the commission." The letter of transmittal from Director W. Y. Blanning of the Bureau of Motor Carriers reveals that the tests were made during the latter half of 1940 by members of the headquarters and field staff of the Bureau. "It is our hope," Mr. Blanning said, "that this report will focus in-

creased attention upon the problem of adequate braking performance of heavy vehicles and combinations of vehicles, and thereby lead to improvement of such performance and reduction of highway accidents."

The abstract of the report summarizing the brake performances observed in the tests says that "in general, braking performance decreased as gross vehicle weight increased in two-axle trucks, in tractor-semitrailer combinations, and truck-full-trailer combinations. Little change occurred in braking performance as bus weight increased." The report recommends "further intensive study" of the problem, which study "should include a broad research program to establish standards of brake performance for vehicles under various conditions of loading and speeds, in which manufacturers, operators, public agencies and others should cooperate."

The report covers 31 mimeographed sheets; it was prepared by Karl F. Walker, associate automotive engineer for the Bureau's Section of Safety, while the tests were conducted under the general supervision of H. H. Kelly, chief of the Section of Safety, with H. H. Allen, mechanical engineer of the Section, in immediate charge.

Supply Trade

E. P. Barnett has joined the Hunt-Spiller Manufacturing Corporation of Boston, Mass., as sales representative in the southeast territory assisting F. B. Hartman of that company. Mr. Barnett had previously been employed as assistant mechanical engineer on the Southern from 1935 to 1940 and, during the past year, as a special engineer on the Chicago, Indianapolis & Louisville.

John F. Van Nort, whose appointment as sales manager, Western division, of the Duff-Norton Manufacturing Company,



John F. Van Nort

with headquarters at Chicago, was announced in the *Railway Age* of February 22, was born at Fairmont, W. Va., on

July 27, 1898, and began his business career in 1922 as a salesman with the Oil Well Supply Company (a subsidiary of the United States Steel Corporation) at Pittsburgh, Pa. He later served in various capacities in the sales department of that company, including those of branch store manager and special representative of the Eastern division. In 1934 he was promoted to manager of Pittsburgh sales, with headquarters at Pittsburgh, which position he held until his recent appointment with the Duff-Norton Manufacturing Company.

Robert L. Clause, executive vice-president of the Pittsburgh Plate Glass Company, Pittsburgh, Pa., has been elected president to succeed H. S. Wherrett, who has been elected to the newly created office of vice-chairman of the board. Mr. Clause



Robert L. Clause

was born in Kokomo, Ind., on February 23, 1890. Following his graduation from Cornell University as a mechanical engineer, he was employed by the Pittsburgh Plate Glass Company as a draftsman in September, 1914, and served successively as an assistant superintendent and as general superintendent of plate glass manufacture. He was elected a director of the company in 1922 and in 1926 he became a vice-president. In June, 1940, he was appointed executive vice-president. For the past 14 years Mr. Clause has been head of the company's glass division.

Mr. Wherrett first became connected with the Pittsburgh Plate Glass Company organization in 1891 at Kokomo, Ind. He became manager of plate glass sales in 1905; chairman of the commercial department in 1916; vice-president in 1919, and president in 1928.

OBITUARY

J. Oakley Hobby, Jr., formerly treasurer of the American Locomotive Company, died April 3, at White Plains, N. Y., after a long illness. Mr. Hobby became an employee of the auditing department of the American Locomotive Company when the firm was founded in 1901 and was appointed assistant treasurer in 1909 and treasurer in 1915. He held this latter position until his retirement because of ill health in 1937.

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RIALTO BRIDGE

VENICE

This bridge is the third to stand on this spot on the Grand Canal in Venice. The first, which was designed in 1178 by Nicolo Barattieri, was built of wood and was carried on pontoons. The second was built from 1255 to 1264 and was also of wooden construction. This second bridge was carried on beams and could be raised in the middle. The present bridge, which is illustrated above, is the work of Giovanni Contino, nicknamed da Ponte,

and was built between the years 1588 and 1591.

• • • For 32 years the Security Sectional Arch has proved to be the most effective means of fuel conservation. While the basic design remains unchanged, it has been continuously developed by the American Arch Company in keeping with the progress in locomotive design, and today, it is still an essential factor in the economical operation of modern steam power.

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Equipment and Supplies

Rock Island Authorized to Purchase Equipment

The Chicago, Rock Island & Pacific has been authorized by the district court to purchase \$1,175,000 of equipment, including three 2,000 hp. Diesel-electric locomotives, five coaches, two diners and two combination mail, baggage and express cars. According to E. M. Durham, Jr., chief executive officer, the new equipment is necessary because of substantially increased patronage of the Rock Island's 15 Rocket trains. Purchase of the three locomotives is reported elsewhere in this column under Locomotives.

LOCOMOTIVES

THE ATCHISON, TOPEKA & SANTA FE has placed an order for one 5,400-hp. Diesel-electric locomotive, Electro-Motive Corporation.

THE ST. LOUIS-SAN FRANCISCO has ordered two 44-ton Diesel-electric switching locomotives from the Davenport Besler Corporation.

PICKANDS, MATHER & Co., Cleveland, Ohio, has ordered one 0-8-0 type steam locomotive from the Baldwin Locomotive Works.

THE PENNSYLVANIA has placed an order for one 1,000 hp. Diesel-electric switching locomotive with the Electro-Motive Corporation.

THE DEWEY PORTLAND CEMENT COMPANY has ordered one 44-ton Diesel-mechanical switching locomotive from the Davenport Besler Corporation.

THE ATCHISON, TOPEKA & SANTA FE has ordered one 5,400-hp. Diesel-electric freight locomotive from the Electro-Motive Corporation.

DAY & ZIMMERMAN, INC., Philadelphia, Pa., has ordered two Diesel-electric switching locomotives from the Baldwin Locomotive Works comprising one of 1,000 hp. and one of 650 hp.

THE CHICAGO, ROCK ISLAND & PACIFIC has ordered three 2,000 hp. Diesel-electric locomotives allocating two to the Electro-Motive Corporation and one to the American Locomotive Company.

THE CENTRAL OF GEORGIA has on order with the Baldwin Locomotive Works two Diesel-electric switching locomotives, not previously reported in the *Railway Age*, including one 1,000-hp. and one of 660-hp.

THE CHICAGO & NORTH WESTERN has received court authorization for the purchase of six Diesel-electric locomotives to cost \$289,150. The American Locomotive Company will build three units of 660 hp. and the Whitcomb Locomotive Company three units of 350 hp.

THE CHICAGO, ROCK ISLAND & PACIFIC has ordered five 30-ton Diesel-mechanical locomotives from the Davenport Besler Corp. These are in addition to five 44-ton units ordered from this company in March as reported in the *Railway Age* of March 8. The court authorization for the purchase

of this equipment was reported in the *Railway Age* of February 15.

THE CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC has placed orders for a total of eight Diesel-electric locomotives as follows: two of 4,000-hp. for use on the "Hiawatha," allocated one each to the Electro-Motive Corporation and American Locomotive Company; one of 5,400-hp. for main line freight service and one of 600-hp. for switching service to the Electro-Motive Corporation; two of 1,000-hp. for switching and light road service to the American Locomotive Company and two of 44-tons each for switching service to the Davenport Besler Corporation.

FREIGHT CARS

Santa Fe Orders 1,700 Freight Cars

The Atchison, Topeka & Santa Fe has placed orders for a total of 1,700 freight as follows:

1,000 50-ton box—Pullman-Standard
500 50-ton auto—Pullman-Standard
200 50-ton gondola—General American
50 steel caboose—Company Shops

N. Y. Central Orders 2000 Cars

The New York Central has placed an order for 2,000 freight cars comprising 1,000 box cars of 50 tons' capacity and 1,000 gondola cars of 50 tons' capacity with Despatch Shops, Inc. The *Railway Age* of April 5 reported the expected placing of the box cars.

I. C. Spends \$7,400,000

The Illinois Central has ordered 2,300 freight cars at a cost of \$7,400,000 as follows:

1,000 50-ton 33-ft hopper Pullman-Standard Car Manufacturing Company
500 40-ton 50½-ft. box General American Transportation Corporation
200 40-ton 40-ft. refrigerator General American Transportation Corporation
100 70-ton covered hopper General American Transportation Corporation
500 40-ton 50½-ft. box American Car & Foundry Company.

The company is inquiring for an additional 100 52-ft. flat cars of 50-tons' capacity.

Inquiry for this equipment was reported in the *Railway Age* of March 29.

THE MISSOURI PACIFIC is inquiring for 100 auto parts cars.

THE CHICAGO, ROCK ISLAND & PACIFIC is asking for prices on 1,000 box cars.

THE LOUISVILLE & NASHVILLE is reported to be in the market for 2,000 freight cars.

THE E. I. DU PONT DE NEMOURS & Co. has placed orders for a total of 192 tank cars with the American Car & Foundry Co.

THE BETHLEHEM STEEL COMPANY has placed an order for three 200-ton ingot cars with company's own shops.

THE GENERAL ELECTRIC COMPANY has ordered one 70-ton covered hopper car from the American Car & Foundry Co.

THE SOUTHERN PACIFIC has ordered 50 high side gondola cars of 70 tons' capacity from the American Car & Foundry Co.

THE CHICAGO, INDIANAPOLIS & LOUISVILLE has been authorized to purchase 60 flat cars and 150 box cars from the Pullman-Standard Car Manufacturing Company.

THE MISSOURI PACIFIC has renewed its inquiry of last year for 100 auto parts cars of 50 tons' capacity. The original inquiry for this equipment was reported in the *Railway Age* of December 28, 1940. The company is reported to be contemplating further large freight car acquisitions.

THE WHEELING & LAKE ERIE has placed an order for 500 hopper cars of 50 tons' capacity with the American Car & Foundry Co.

THE NASHVILLE, CHATTANOOGA & ST. LOUIS has ordered 200 hopper cars of 50 tons' capacity from the Pullman-Standard Car Manufacturing Company.

THE CENTRAL OF GEORGIA has ordered 100 box cars of 50 tons' capacity and 100 automobile cars of 50 tons' capacity from the Pullman-Standard Car Manufacturing Company. The expected purchase of these cars was reported in the *Railway Age* of April 5.

PASSENGER CARS

Santa Fe Orders 22 Passenger Cars

The Atchison, Topeka & Santa Fe has placed an order for 22 passenger-train cars—comprising two 36-seat diners; one lunch-counter diner; five combination mail-baggage cars and 14 mail-storage cars, with the Edward G. Budd Manufacturing Co.

Construction

THE CHESAPEAKE & OHIO.—This company has awarded contracts for construction work as follows: Concrete pedestals, abutments and retaining walls for team track facilities at Cincinnati, Ohio, estimated cost \$226,000, to the Thomas Company, Inc., Huntington, W. Va.; new freight house at Waynesboro, Va., estimated cost \$71,500, to the F. L. Showalter Company, Lynchburg, Va.; grading and masonry for main tracks at Elmo, W. Va., estimated cost \$75,000, to the T. C. Staples Construction Company, Charleston, W. Va.; grading and masonry for additional yard Tracks at Elk Run Junction, W. Va., estimated cost \$61,000, to the C. C. Thomas Company, Inc., Huntington, W. Va.; grading and masonry for nine tracks at Jenkins, Ky., estimated cost \$72,000, to the Forbes Construction Company, Huntington, W. Va.; grading and masonry for nine tracks at Maytown, Ky., estimated cost \$70,000, to Haley, Chisholm & Morris, Inc., Charlottesville, Va.; replacing roof of the roundhouse at Stevens, Ky., estimated cost \$44,000, to Milo R. Hanke, Cincinnati, Ohio. The company has also authorized the following projects, work on which will be performed by the company's own forces: Additional yard tracks at Huntington, W. Va., estimated cost \$52,000; additional mine tracks at Wilkinson, W. Va., estimated cost \$25,800; additional industrial tracks at Carey, Ohio, estimated cost \$28,000; replacing the superstructure of Bridge 1696 with heavier steel at Hoovers, Ind., estimated cost of \$34,000.

LEHIGH VALLEY.—The Pennsylvania Public Utility Commission has approved plans calling for the abolishment of a

Continued on next left-hand page



Repaired
Superheater Unit

STRANGLED SUPERHEATER UNITS . . .



REmanufactured
Superheater Unit

. . . Substantially Reduce Steam Chest Pressure!

Superheater units, in being repaired, frequently are restricted in area through the tubing or, as is pictured, through the return bends. The result is increased pressure drop from boiler to cylinders and lower m. e. p. for a given boiler pressure.

Such superheater units are strangled!

Superheater units repaired by welding and other uncertain make-shift methods have been known to have the steam passages restricted as much as 25 to 35 per cent. Restrictions in gas and steam areas of a set of superheater units, through repair methods, will reduce the efficiency of the locomotive 3 to 5 per cent.

Think what this means when the units of a number of locomotives are so repaired.

Such reductions of effectiveness can be avoided definitely only by having superheater units maintained always at their original dimensions and areas. The one way to assure this is to have them REManufactured—not merely repaired—when they become unserviceable after many years of duty.

REmanufactured superheater units not only have the specified dimensions, but have a renewed serviceability for many more years—all provided at a cost much less than for new units.



SUPERHEATERS • FEEDWATER HEATERS
AMERICAN THROTTLES • STEAM DRYERS
EXHAUST STEAM INJECTORS • PYROMETERS

THE
SUPERHEATER
C O M P A N Y

Representative of
AMERICAN THROTTLE COMPANY, INC.
60 East 42nd Street, NEW YORK
122 S. Michigan Ave. CHICAGO

Montreal, Canada
THE SUPERHEATER COMPANY, LTD.

crossing at grade in the borough of Tata-my, Northampton county, where state highway route No. 48025 formerly crossed the single track of the Easton and Northern branch of the Lehigh Valley and the construction in lieu thereof of a new crossing about 30 ft. further south where the highway, which is being relocated, will then cross. Estimated cost of the new bridge and necessary highway work amounts to \$28,200.

PITTSBURGH & LAKE ERIE.—The Pennsylvania Public Utility Commission has approved plans calling for the alteration and repair of an eight-span steel bridge approximately 1,270 ft. in length, and the approaches thereto, by means of which state highway route No. 118 is carried across the Monongahela river and across and above the two main line tracks of the Pittsburgh & Lake Erie from a point in Speers borough, Washington county, to a point in Belle Vernon borough, Fayette county. The plan of the proposed improvement provides for the removal of the existing timber floor on the main structure, and the construction of a steel beam and concrete bridge floor in lieu thereof; for the construction of a new timber sidewalk floor; for the rearrangement of the existing stringers and the addition of new stringers in order to increase the carrying capacity of the bridge floor; for the reconstruction of the hand railing along the entire length of the bridge; for the renewal of the existing expansion roller nests supporting the main truss; and for cleaning and painting the entire structure. The plan further provides for the removal of the existing pier supporting the easterly end of the main structure and the westerly end of the Belle Vernon approach structure and the construction of a new reinforced concrete pier in lieu thereof. Estimated cost of the proposed improvement, exclusive of property damages and necessary alterations to railroad facilities, amounts to \$97,845.

UNION PACIFIC.—A contract has been awarded J. W. Bailey, Seattle, Wash., for the construction of a one-story warehouse at Seattle, which will be leased to the United Motors Service, Inc. The building will be 175 ft. by 175½ ft. with a reinforced concrete foundation and outside walls finished in architectural concrete. The roof will be of wood construction with a built-up tar and gravel covering. The building will provide loading, receiving, shipping and office rooms. The floors will be of concrete except in the office and toilet rooms which will have asphalt tile floors, and a sprinkler system will be installed in the receiving, shipping and service department rooms. The cost of the building will be approximately \$65,000.

UNION PACIFIC.—This company has asked the Interstate Commerce Commission for authority to jointly construct with the Chicago, Burlington & Quincy and the Missouri Pacific a 3,500 ft. spur track and to operate jointly with these companies over 5,000 ft. of track giving the roads access to a new bomber assembly plant now in the process of construction on the military reservation at Fort Crook, Nebr.

Financial

AKRON, CANTON & YOUNGSTOWN.—*Annual Report.*—The 1940 annual report of this company and its subsidiary, the Northern Ohio, shows net income, after interest and other charges, of \$73,370 as compared with a net deficit of \$22,539 in 1939. Selected items from the consolidated income statement follow:

	1940	Increase or Decrease Compared with 1939
RAILWAY OPERATING REVENUES	\$2,388,573	+\$340,321
Maintenance of way and structures	338,298	+36,639
Maintenance of equipment	247,335	+47,728
Transportation	697,391	+54,788
TOTAL OPERATING EXPENSES	1,659,822	+246,296
Operating ratio	69.49	+4.48
NET REVENUE FROM OPERATIONS	728,750	+94,025
Railway tax accruals	170,542	+17,234
Hire of freight cars	145,991	-31,812
NET RAILWAY OPERATING INCOME	413,297	+107,288
TOTAL INCOME	467,766	+106,133
Rent for leased roads and equipment	29,630	+8,632
Interest on funded debt	333,234	-2,337
TOTAL DEDUCTIONS FROM GROSS INCOME	394,396	+10,223
NET INCOME	\$73,370	+\$95,910

BESSEMER & LAKE ERIE.—*Annual Report.*—The 1940 annual report of this company shows net income, after interest and other charges, of \$6,483,457, compared with a net income of \$4,201,017 in 1939. Selected items from the income statement follow:

	1940	Increase or Decrease Compared with 1939
RAILWAY OPERATING REVENUES	\$18,026,227	+\$4,338,771
Maintenance of way and structures	1,262,318	-78,074
Maintenance of equipment	3,849,678	+624,596
Transportation	2,689,957	+418,781
TOTAL OPERATING EXPENSES	8,377,040	+992,219
NET REVENUE FROM OPERATIONS	9,649,187	+3,346,552
Railway tax accruals	3,193,253	+1,479,327
Railway operating income	6,455,934	+1,867,225
Net Rents—Cr.	695,460	+310,851
NET RAILWAY OPERATING INCOME	7,151,394	+2,178,076
Total other income	172,012	+72,305
TOTAL INCOME	7,323,406	+2,250,381
Rent for leased roads	10	-12,167
Interest on funded debt	786,010	+3,460
TOTAL FIXED CHARGES	796,816	-21,305
NET INCOME	6,483,457	+2,282,440
Disposition of net income:		
Dividends	4,922,226	+1,999,250
Miscellaneous appropriations	620	-3,055
TOTAL APPROPRIATIONS OF INCOME	4,922,846	+1,996,195
INCOME BALANCE TRANSFERRED TO PROFIT AND LOSS	\$1,560,611	+\$286,245

CHICAGO & EASTERN ILLINOIS.—*Annual Report.*—The annual report of this company shows net deficit, after interest and other charges, of \$1,041,022, compared with a net deficit of \$1,119,192 in 1939. Selected items from the income statement follow:

	1940	Increase or Decrease Compared with 1939
Average mileage operated	924.92	-1.61
RAILWAY OPERATING REVENUES	\$15,688,059	+\$351,809
Maintenance of way and structures	1,898,134	+63,483
Maintenance of equipment	2,781,391	+152,102
Transportation—rail	6,143,117	+144,484
TOTAL OPERATING EXPENSES	12,233,010	+393,299
NET REVENUE FROM OPERATIONS	3,455,049	-41,490
Railway tax accruals*	988,000	+74,000
Railway operating income	2,467,049	-115,490
Equipment rents—Net—Dr.	823,101	-53,346
Joint facility rents—Net—Dr.	654,240	-29,779
NET RAILWAY OPERATING INCOME	989,708	-32,365
Total other income	315,178	-22,272
TOTAL INCOME	1,304,886	-54,637
Rent for leased roads and equipment	195,351	9,651
Interest on funded debt	1,586,872	-8,620
TOTAL FIXED CHARGES	2,259,072	-28,471
INCOME AFTER FIXED CHARGES—Dr.	1,041,022	-78,170
Disposition of net income:		
Appropriation of income for sinking fund	117,500	.....
Interest on bonds in sinking fund	217,880	.....
BALANCE OF INCOME TRANSFERRED TO PROFIT AND LOSS—Dr.	\$1,436,402	-\$78,170

* No federal income or excess profits taxes accrued for the year.

CHICAGO & NORTH WESTERN.—*Three new directors.*—Leonard E. Hurtz, president of the Fairmont Creamery Company, Omaha, Neb., Harry W. Harrison, chairman of the preferred stockholders committee, Philadelphia, Pa., and John L. Banks, president of the First National Bank, Superior, Wis., were elected directors on April 8. Mr. Hurtz was elected for a term of three years and Mr. Harrison and Mr. Banks both for terms of one year.

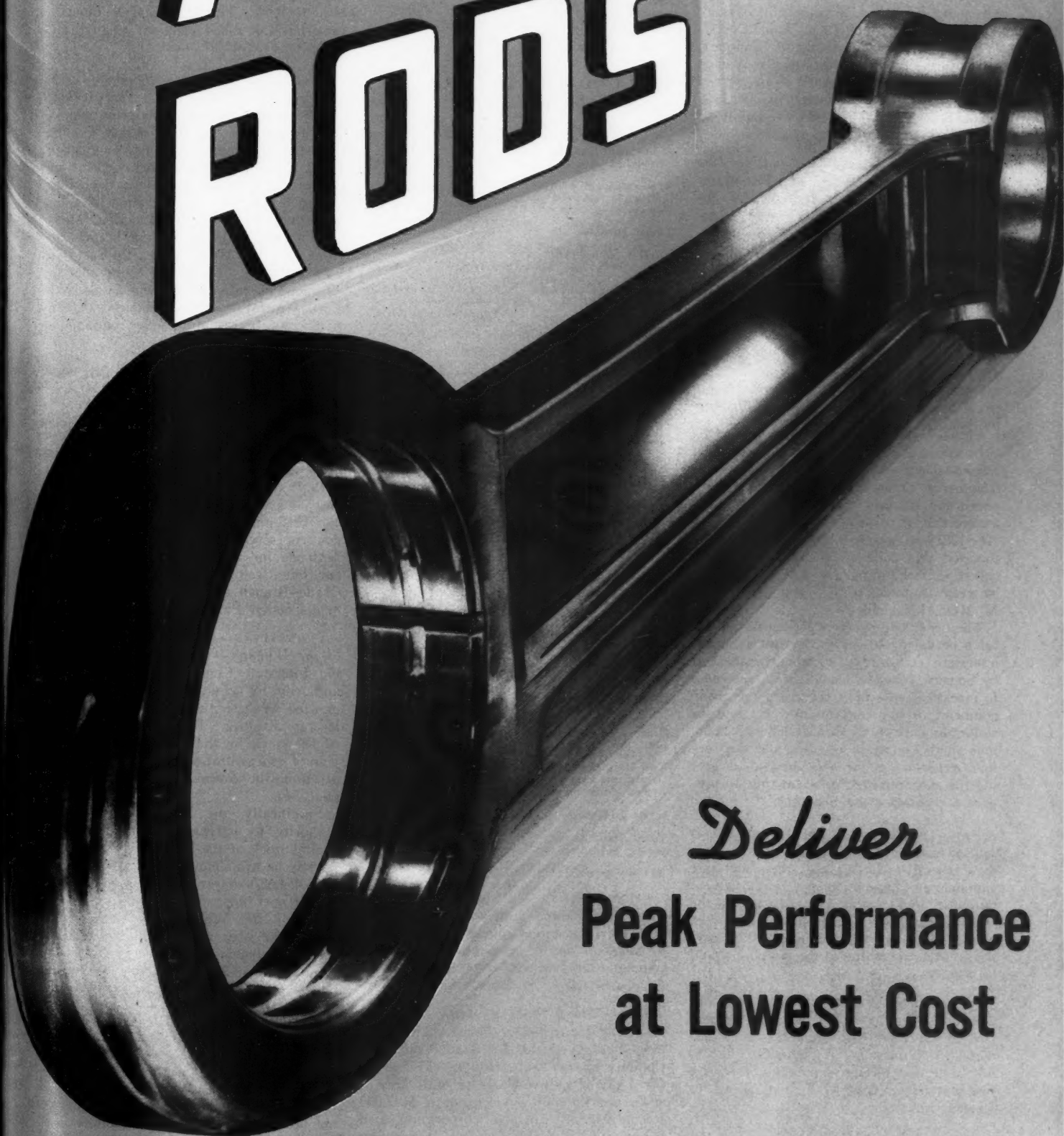
CHERAW & WESTERN.—*Acquisition.*—Acting on this company's request, Division 4 of the Interstate Commerce Commission has dismissed its application for authority in Finance Docket No. 13204 to acquire the railroad properties formerly owned by the Chesterfield & Lancaster.

COLORADO & SOUTHERN.—*Abandonment.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon its Clear Creek lines, extending westward from Golden, Colo., to the end of the line at Idaho Springs, 21.8 miles, and northwest from Forks Creek, Colo., to Black Hawk, 7.8 miles.

CHICAGO GREAT WESTERN.—*Three new directors.*—William F. Carey, president of Carey, Baxter and Kennedy, New York;

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ALCO RODS



Deliver
**Peak Performance
at Lowest Cost**

AMERICAN LOCOMOTIVE COMPANY

Robert R. Fauntleroy of the Moline Malleable Iron Company, St. Charles, Ill.; and Ivan A. McKenna, vice-president of the Reuben H. Donnelley Corporation, Chicago; were elected directors of the Chicago Great Western for five-year terms on April 8.

CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA.—*New Directors.*—L. E. Hurtz, president Fairmont Creamery Company of Omaha, Neb., and J. L. Banks, president, First National Bank of Superior, Wis., were elected directors of this road at the annual meeting on April 9, to succeed the late Governor Walter Kohler, of Kohler, Wis., and Harold Vanderbilt of New York, resigned.

DELAWARE & HUDSON.—*Bonds of the Rensselaer & Saratoga.*—The Rensselaer & Saratoga has been authorized by Division 4 of the Interstate Commerce Commission to issue \$2,000,000 of first mortgage four per cent bonds, to be sold at par and the proceeds used to retire a like principal amount of outstanding first mortgage six per cent 20-year gold bonds, due May 1, 1941. The new bonds will mature April 1, 1961.

At the same time Division 4 authorized the Delaware & Hudson to assume liability as guarantor for the payment of the interest and sinking fund in connection with the bonds.

DENVER & RIO GRANDE WESTERN.—*Abandonment.*—Division 4 of the Interstate Commerce Commission has further postponed for 40 days from April 12 the effective date of its order in Finance Docket No. 12829 in which it had previously authorized this company to abandon its so-called Santa Fe branch, a narrow-gauge line, between Antonio, Colo., and Santa Fe, N. Mex., 125.3 miles.

The order had previously been postponed for a period of 40 days to permit a Senate interstate commerce subcommittee headed by Senator Johnson, Democrat of Colorado, to investigate the facts regarding the abandonment. The subcommittee is now in Colorado and New Mexico holding hearings in the territory affected and the further extension is for the purpose of giving the subcommittee sufficient time to prepare a report for the Senate.

ERIE.—*Acquisition by the Moosic Mountain & Carbondale.*—The Moosic Mountain & Carbondale has asked the Interstate Commerce Commission for authority to purchase and operate a portion of the Wilkes-Barre & Eastern extending from Suscon, Pa., to Plains, 8 miles. The purchase price, according to the petition, would be \$35,000.

JEFFERSON & NORTHWESTERN.—*Abandonment.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon, as to interstate and foreign commerce, its entire line extending from Jefferson, Tex., to Linden, 19.9 miles.

ELGIN, JOLIET & EASTERN.—*Annual Report.*—The 1940 annual report of this company shows net income, after interest and other charges, of \$3,590,236, as compared with net income of \$2,497,049 in 1939.

Selected items from the income account follow:

	1940	Increase or Decrease Compared with 1939
RAILWAY OPERATING REVENUES	\$22,138,090	+\$3,989,851
Maintenance of way	1,669,996	-35,938
Maintenance of equipment	3,570,326	+294,270
Transportation	7,931,751	+1,270,876
TOTAL OPERATING EXPENSES	13,786,604	+1,550,614
NET REVENUE FROM OPERATIONS	8,351,486	+2,439,237
Railway tax accruals†	1,444,502	+118,502
Hire of equipment		
—Net	1,152,884	+438,328
Joint facility rents—Net	71,471	+3,931
NET RAILWAY OPERATING INCOME	4,884,588	+1,569,122
Non-operating income	201,982	+23,546
TOTAL INCOME	5,086,571	+1,592,668
Interest on funded debt	1,301,482	+396,482
TOTAL FIXED CHARGES	1,475,954	+497,606
NET INCOME	\$3,590,236	+\$1,093,187

† Exclusive of Federal Income Tax.

LEHIGH & HUDSON RIVER.—*Annual Report.*—The 1940 annual report of this company shows net income, after interest and other charges, of \$285,031, compared with net income of \$205,828 in 1939. Selected items from the income statement follow:

	1940	Increase or Decrease Compared with 1939
RAILWAY OPERATING REVENUES	\$1,729,534	+\$135,532
Maintenance of way and structures	208,903	+46,367
Maintenance of equipment	283,523	+11,525
Transportation	528,922	-10,071
TOTAL OPERATING EXPENSES	1,141,891	+48,918
Operating ratio	66.2	-2.4
NET REVENUE FROM OPERATIONS	587,644	+86,614
Railway tax accruals	199,640	+15,640
Hire of equipment	68,191	-2,801
Joint facility rents	58,715	-3,205
NET RAILWAY OPERATING INCOME	261,097	+76,980
Non-operating income	24,770	-423
GROSS INCOME	285,868	+76,557
TOTAL DEDUCTIONS FROM GROSS INCOME	836	-2,646
NET INCOME	\$285,031	+\$79,204

LINVILLE RIVER.—*Abandonment.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon as to interstate and foreign commerce its entire line extending from Cranberry, N. C., to Boone, 31.6 miles.

MARYLAND & PENNSYLVANIA.—*R. F. C. Loan and Extension of Bonds.*—This company has asked the Interstate Commerce Commission for authority to (a) extend for a period of five years or until May 1, 1946, the time of payment of a \$147,000 Reconstruction Finance Corporation loan maturing May 1, 1941; and (b) borrow an additional \$100,000 from the R. F. C. for a period of five years. The proceeds of the loan would be used to acquire at maturity on May 1, \$88,500 of extended first mort-

gage five per cent bonds of the Maryland & Pennsylvania Terminal and to reimburse the treasury for the cost of \$14,500 of bonds of the terminal company acquired at a cost of \$11,077.

At the same time the terminal company has asked the commission for authority to extend the date of maturity of \$200,000 of its terminal bonds which are now outstanding for a period of 25 years, or until May 1, 1966. The Maryland & Pennsylvania has also asked authority to guarantee the extension of the bonds.

NEW YORK CENTRAL.—*Abandonment by the Providence, Webster & Springfield.*—The Providence, Webster & Springfield has been denied authority by Division 4 of the Interstate Commerce Commission to abandon a line and the New York Central and the Boston & Albany have been denied authority to abandon the operation of a line extending from Webster Junction, Mass., to Webster, 11 miles, with a branch line from Webster Mills, Mass., to East Village, 1.3 miles. Division 4 found that the continued operation of the line by the New York Central and the Boston & Albany would not impose any undue burdens on those systems.

NEW YORK, NEW HAVEN & HARTFORD.—*Abandonment.*—This company has asked the Interstate Commerce Commission for authority to abandon a line extending from West Medway, Mass., to Bellingham Junction, 4.1 miles.

PENNSYLVANIA.—*Abandonment.*—This road has applied to the Interstate Commerce Commission for authority to abandon its so-called Penfield branch which "extends for a distance of approximately one mile from a junction with the Low Grade Branch at Penfield," all in Clearfield County, Pa.

PENNSYLVANIA.—*Acquisition of Control of the Wabash.*—This company has asked the Interstate Commerce Commission for authority to acquire control of the reorganized Wabash through the purchase of its capital stock. Details of the purchase of the stock by the Pennsylvania and the plan of reorganization of the Wabash were given in the *Railway Age* of March 22, page 546.

Specifically, the Pennsylvania requests authority to purchase all the shares of capital stock of the Wabash or such shares as may be available for purchase, provided that 454,627 shares of common, constituting 50 per cent of all the total capital stock of the Wabash are so available. Under the plan it would be possible for the Pennsylvania to purchase 598,186 shares of common at \$12.75 a share, costing \$7,626,871; while if it purchases only 454,627 shares of common, the cost would be \$5,796,494.

RICHMOND-WASHINGTON.—*Redemption of Bonds.*—This company will redeem and pay off on June 1, \$9,000,000 of outstanding guarantee collateral trust mortgage 4s, not previously called for redemption.

SOUTHERN RAILWAY.—*Annual Report.*—The 1940 annual report for this company shows net income after interest and other charges of \$7,352,072, as compared with a

net income of \$6,487,726 in 1939. Selected items from the income account follow:

	1940	Increase or Decrease Compared with 1939
RAILWAY OPERATING REVENUES	\$105,905,395	+\$6,059,455
Maintenance of way	13,081,071	+1,210,412
Maintenance of equipment	18,001,067	+1,332,651
Transportation	35,868,238	+1,748,897
TOTAL OPERATING EXPENSES	72,870,181	+4,456,268
NET REVENUE FROM OPERATIONS	33,035,214	+1,603,187
Taxes	8,391,483	+504,629
Hire of equipment	2,386,269	+467,759
Joint facility rents	800,169	-195,365
NET RAILWAY OPERATING INCOME	21,457,294	+826,163
Non-operating income	2,505,291	-542,252
GROSS INCOME	23,962,585	+283,912
Rent for leased roads and equipment	2,483,961	-81,130
Interest on funded debt	12,732,292	-433,102
TOTAL DEDUCTIONS FROM GROSS INCOME	13,650,659	-465,372
NET INCOME	\$7,352,072	+\$864,347

WABASH.—*Annual Report*.—The 1940 annual report of this road shows net deficit after interest and other charges of \$2,335,899, as compared with a net deficit of \$3,542,184 in 1939. Selected items from the income account follow:

	1940	Increase or Decrease Compared with 1939
Average mileage operated	2,409.43	-.06
RAILWAY OPERATING REVENUES	\$46,013,670	+\$1,351,144
Maintenance of way and structures	5,978,310	+139,229
Maintenance of equipment	7,266,157	-188,455
Transportation—Rail Line	17,953,014	+481,431
TOTAL OPERATING EXPENSES	34,705,545	+460,406
Operating ratio	75.42	-1.26
NET REVENUE FROM OPERATIONS	11,308,125	+890,738
Railway tax accruals	2,738,591	+168,163
Railway operating income	8,569,534	+722,576
Net rents—Dr.	4,016,189	-271,523
NET RAILWAY OPERATING INCOME	4,553,345	+994,099
Total other income	635,283	+200,741
TOTAL INCOME	5,188,628	+1,194,840
Rent for leased roads and equipment	365,850	-15,908
Interest on funded debt—Fixed interest	6,993,700	+2,636,881
TOTAL FIXED CHARGES	7,442,791	-9,615
NET DEFICIT	\$2,335,899	-\$1,206,284

Dividends Declared

Cleveland, Cincinnati, Chicago & St. Louis.—Preferred, \$1.25, quarterly, payable April 30 to holders of record April 19.

Pittsburgh, Bessemer & Lake Erie.—7½¢, semi-annually, payable October 1 to holders of record September 15.

Average Prices of Stocks and Bonds

	Apr. 8	Last week	Last year
Average price of 20 representative railway stocks..	29.63	29.98	32.11
Average price of 20 representative railway bonds..	64.60	65.61	60.01

Railway Officers

EXECUTIVE

Ralph E. Shineman has been appointed assistant to vice-president (traffic) of the New York Central, with headquarters at New York, in charge of advertising and with such other duties as may be assigned.

FINANCIAL, LEGAL AND ACCOUNTING

Ralph B. Rice, land appraiser on the New York Central (Michigan Central) at Detroit, Mich., has been promoted to real estate and tax agent, with the same headquarters, succeeding William Hutchinson, who has retired.

J. Elmer Monroe, statistician for the Bureau of Railway Economics, Association of American Railroads, has been appointed assistant director of the Bureau, succeeding R. J. Leimer whose retirement was noted in the *Railway Age* of March 22. At the same time Dr. J. H. Parmelee, director of the Bureau, also announced several other promotions, including the appointments of Graham E. Getty as statistician to succeed Mr. Monroe and of H. Y. Turner and C. B. Mattingly as assistant statisticians. Also, Quentin D. Watson has been appointed secretary of the Bureau to succeed the late Edward Keith Kloman, whose death on February 10 was noted in the *Railway Age* of February 15.

Mr. Monroe, the new assistant director, has been with the Bureau since 1913, except for the 1917-19 period when he was in World-War military service with the American Expeditionary Force. He was born in Washington, D. C. on September 23, 1894, and was educated at George Washington University.

OPERATING

D. L. Nelson has been appointed treasurer, superintendent and station agent of the Carbon County Railway at Columbia, Utah, succeeding John E. Buchspice.

M. Bougher has been appointed assistant to the chief operating officer of the St. Louis-San Francisco, a newly created position, with headquarters at St. Louis, Mo.

J. T. McCorkle, assistant superintendent of terminals on the Kansas City Southern at Kansas City, Mo., has been promoted to superintendent of terminals, with the same headquarters, a change of title.

O. S. Gaddis, office assistant for the Pullman Company at San Antonio, Tex., has been promoted to district superintendent at that point, succeeding J. S. Grear, who died on February 26.

A. M. Martin, road foreman of engines of the Chicago, Indianapolis & Louisville (Monon), has been promoted to trainmaster-road foreman of engines of the Southern division, a newly created position, with headquarters as before at Lafayette,

Ind., and M. E. Strother, a locomotive engineer at Lafayette, has been advanced to trainmaster-road foreman of engines of the Northern division, with the same headquarters, also a newly created position.

A. L. Prather, receiving and forwarding agent of the Panama Railroad at Cristobal, C. Z., has been promoted to general manager, with headquarters at Balboa Heights, C. Z., succeeding C. T. Lindsay, resigned.

W. G. Chase has been appointed assistant trainmaster on the New York Central, at Mattoon, Ill., succeeding T. W. English, who has been promoted to trainmaster at Springfield, Ohio, having jurisdiction over terminals at Springfield, Dayton and Middletown, Ohio.

Ray Hurd, agent on the Belt Railway of Chicago at Clearing, Ill., has been promoted to superintendent of car service, with the same headquarters, succeeding George J. Shreeve, whose death on January 24 was announced in the *Railway Age* of February 1.

Michael Joseph Barry, whose promotion to superintendent of the Winnipeg Terminals division of the Canadian Pacific, with headquarters at Winnipeg, Man., was reported in the *Railway Age* of April 5, was born at Winnipeg on December 21, 1889, and attended St. Mary's School at Winnipeg. He entered railway service on



Michael Joseph Barry

the Canadian Pacific in September, 1907, as a clerk in the local freight department at Winnipeg, later being transferred to the yard as a car checker and serving in various clerical positions until 1915, when he was promoted to night yardmaster at Broadview, Sask. A year later he was transferred back to Winnipeg and was later advanced to assistant yardmaster and then general yardmaster. In 1931 Mr. Barry was promoted to assistant superintendent of the Winnipeg Terminals division, the position he held until his recent promotion, effective April 1.

Luis H. Alvarado, superintendent of the Mexican Pacific, has been appointed assistant general manager, Pacific division, of the Kansas City, Mexico & Orient (Lines in Mexico), a newly created position, with headquarters as before at Los Mochis, Sin., and Antonio G. Castro has

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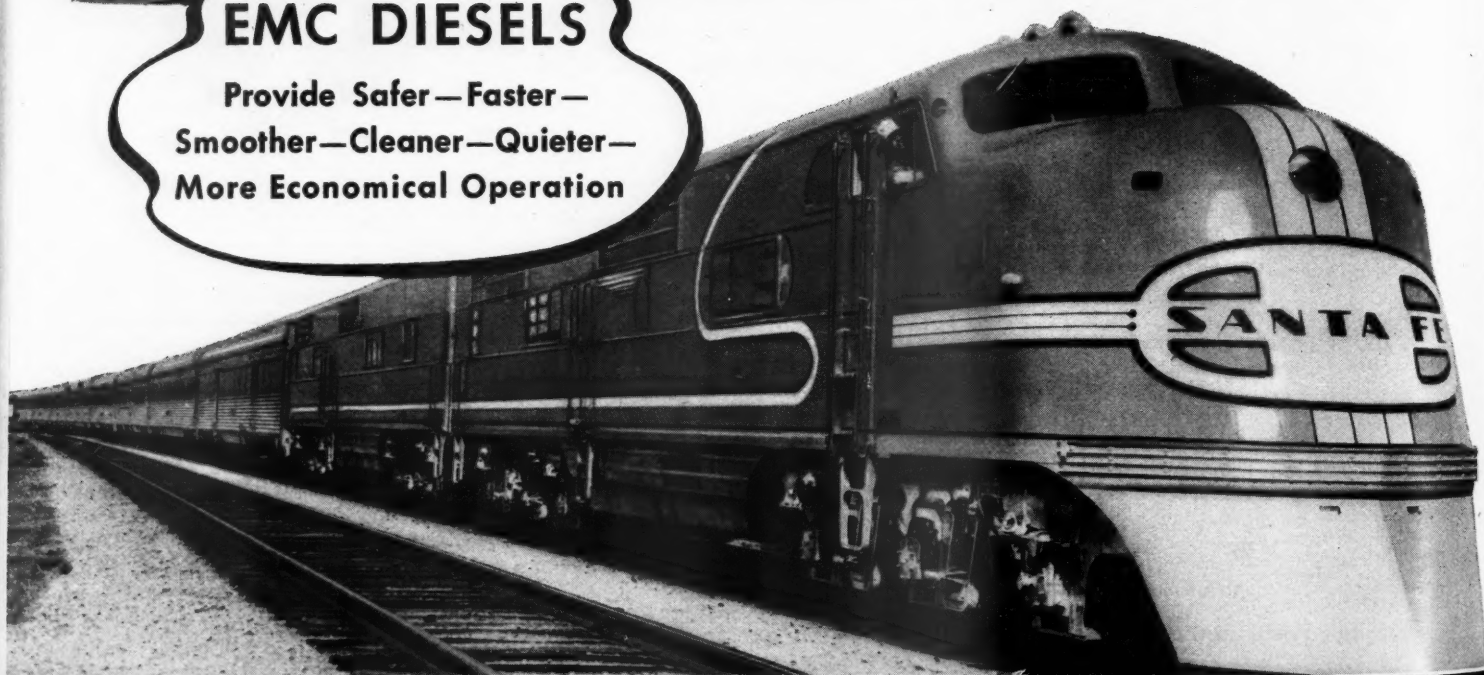
*Bigger Operations
follow*

DIESEL EXPANSION



EMC DIESELS

Provide Safer—Faster—
Smoother—Cleaner—Quieter—
More Economical Operation



ELECTRO-MOTIVE
SUBSIDIARY OF GENERAL MOTORS

ating Economies

SION



THE displacement of steam power with Diesels has been a natural process of evolution. As a result of careful studies by operating officials, the initial applications of Diesel power were made where the greatest immediate savings could be realized. Gradually and thoughtfully, similar applications have been continually extended during the past six years, until today EMC Diesels are operating in switching, transfer, freight and passenger service, with marked reductions in operating costs, higher availability, faster schedules, increased traffic and over-all



improvement of rail transportation. Now that Diesel power has definitely proved its superiority in all classes of service, the time is rapidly approaching when railroads will be able to realize the extended economies which naturally follow the complete Dieselization of an entire railroad or section of railroad, such as fewer locomotives required—reduced locomotive service and repair facilities—fewer stops for fuel and water—reduced water treatment costs—reduced damage to rails and roadbed—reduced repairs and reinforcement of bridges.

CORPORATION
LA GRANGE, ILLINOIS, U. S. A.

been appointed superintendent of the Pacific division, with headquarters at Los Mochis, succeeding **J. G. Martinez**.

F. M. Conder, assistant superintendent on the Texas & Pacific, with headquarters at Fort Worth, Tex., has been promoted to supervisor of wages, with headquarters at Dallas, Tex., and **G. Chiles**, assistant trainmaster at Weatherford, Tex., has been advanced to assistant superintendent at Fort Worth, succeeding Mr. Conder.

TRAFFIC

M. A. Knos, city freight and passenger agent for the Great Northern at Buffalo, N. Y., has been promoted to general agent at that point.

Frank R. Busch has been appointed traveling industrial agent of the Delaware & Hudson, with headquarters at Albany, N. Y., succeeding **D. G. Paish**, resigned.

Stanley E. Mullikin has been appointed general eastern agent of the Missouri & Arkansas at Washington, D. C., succeeding **John P. Conger**, who has resigned.

G. W. Frink, assistant general freight agent on the St. Louis Southwestern at St. Louis, Mo., has been promoted to general merchandise agent, a newly created position, with the same headquarters.

Edward S. O'Brien, chief clerk in traffic offices of the Western Pacific at Chicago, has been promoted to general agent at Pittsburgh, Pa., a newly created position.

F. A. Harmon, coal traffic agent for the Chesapeake & Ohio at Chicago, has been promoted to assistant general coal freight agent, with the same headquarters, a newly created position.

G. L. Eastman, commerce agent on the Missouri Pacific at St. Louis, Mo., has been promoted to assistant general freight agent at Kansas City, Mo., succeeding **G. W. Coffin**, who has been assigned to other duties.

G. H. Nourse, commercial agent, freight department, on the Chicago & Eastern Illinois at St. Paul, Minn., has been promoted to general agent, freight department, at Minneapolis, Minn., succeeding **Jasper Triteline**, who has retired on pension.

A. B. Calloway, district freight representative for the Baltimore & Ohio at Jacksonville, Fla., has been promoted to industrial agent at Cincinnati, Ohio, succeeding **Stanley A. Temple**, who has been assigned to special duties in the industrial department at Baltimore, Md.

R. E. Kulp, general agent for the Indiana Harbor Belt Railroad at Chicago, has been appointed general agent, freight department, for the New York Central at San Francisco, Cal., succeeding **W. M. Snow**, who has been appointed New England freight agent for the New York Central at Boston, Mass.

Alfred H. Jensen, chief clerk in the office of the general agent on the Western Pacific at Stockton, Cal., has been pro-

moted to district passenger agent, Sacramento and Stockton territory, with headquarters at Sacramento, Cal., succeeding **H. G. Wyman**, whose appointment as acting superintendent of dining cars and hotels, with headquarters at Oakland, Cal., was reported in the *Railway Age* of January 11.

M. E. Chase, freight and passenger agent for the Denver & Rio Grande Western at San Francisco, Cal., has been promoted to general agent at Fresno, Cal., succeeding to a portion of the duties of **Charles K. Faye**, who continues as general agent for the Western Pacific at that point. **R. E. Nate**, traveling freight and passenger agent for the D. & R. G. W. at St. Louis, Mo., has been advanced to general agent at Atlanta, Ga., a newly created position.

Fred C. Hogue, acting general traffic manager of the Denver & Rio Grande Western, has been appointed general traffic manager, with headquarters as before at Denver, Colo., and **Oliver J. Grimes**, assistant to the general traffic manager, has been appointed assistant general traffic manager, with the same headquarters. Photographs and biographies of Mr. Hogue and Mr. Grimes were published in the *Railway Age* of October 26, 1940, following their promotions to acting general traffic manager and assistant to the general traffic manager, respectively.

R. H. Crozier, general passenger agent of the Spokane, Portland & Seattle, with headquarters at Portland, Ore., retired on April 1, and **R. W. Pickard**, general freight agent, has been appointed general freight and passenger agent, with headquarters as before at Portland. **J. C. Moore**, assistant to the general freight agent, has been appointed assistant general freight agent, and **G. L. Williams**, assistant to the general passenger agent, has been appointed assistant general passenger agent, both with headquarters as before at Portland.

Mr. Crozier was born at North Sangamon, Ill., on March 6, 1871, and attended Lake Forest Academy, Wabash College and Lake Forest College, graduating from the latter in 1893. He entered railway service in January, 1894, as a clerk in the general offices of the Hannibal & St. Joseph (now part of the Chicago, Burlington & Quincy) at St. Louis, Mo., later serving on the Burlington as a cashier and ticket agent at Chicago, advertising agent at St. Louis, rate clerk at St. Paul, Minn., traveling passenger agent at Kansas City, and division passenger agent at St. Joseph, Mo. In March, 1906, he left railway service to become assistant to the president of Lake Forest University, Lake Forest, Ill., and on January 6, 1910, he went with the Spokane, Portland & Seattle as advertising agent. Mr. Crozier was advanced to assistant general passenger agent on May 1, 1913, and on August 1, 1924, he was promoted to general passenger agent, the position he held until his retirement on April 1.

Herman C. Forgy, supervisor of mail and baggage traffic of the Union Pacific, has been promoted to manager of mail, baggage and express traffic, with head-

quarters as before at Omaha, Neb. Mr. Forgy was born at New Windsor, Ill., on December 15, 1882, and attended Knox College, Galesburg, Ill., and the Creighton College of Law at Omaha, Neb. He began his career in 1901 in a law office at Gales-



Herman C. Forgy

burg and the following year became a mailing clerk in the post office at that point. He later became a railway postal clerk and during the first World War served as a 1st lieutenant in the U. S. Army, returning to railway mail service on September 19, 1919. On March 15, 1920, Mr. Forgy went with the Union Pacific as a traveling agent for the mail traffic bureau and on April 16, 1934, he was advanced to supervisor of mail and baggage traffic, with headquarters at Omaha, the position he held until his recent promotion, effective April 1. Mr. Forgy is a lieutenant colonel in the infantry reserve and is president of the Omaha chapter of the Reserve Officers Association.

Arthur G. Parker, whose promotion to assistant to the freight traffic manager on the Southern Pacific, with headquarters at Los Angeles, Cal., was reported in the *Railway Age* of March 8, was born at Passaic, N. J., on September 28, 1899, and entered railway service on August 22,



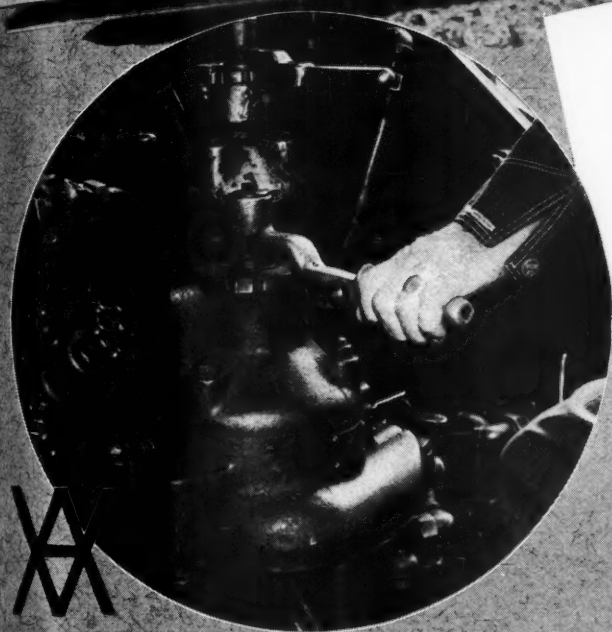
Arthur G. Parker

1917, on the Pennsylvania at New York. He subsequently worked in various capacities in the passenger traffic departments of the Lehigh Valley and the Louisville & Nashville and in the accounting department of the Southern Pacific Steamship Lines at New York. In August, 1923, he was ap-

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Here is a typical recognition of the value in modernization. One prominent railroad has obtained such satisfactory results during the past four years with our No. 8ET Brake Equipment on 38 new locomotives that they are extending its use. Last year 19 locomotives were reconditioned, and now have the same improved brake performance possibilities as the new motive power, because the No. 6ET equipment was converted to the No. 8ET. In addition to better overall brake performance, the inherent maintenance advantages of this modernized equipment will be realized. Pedestal mounting of valve devices in the cab provides accessibility for inspection, adjustment, or replacement. "WABCOTITE" fittings on all apparatus keep pipe joints tight. Suction filters on compressors exclude dirt from moving parts and lengthen service life. ★ Similar brake equipment conversions are now contemplated for still other locomotives in service on this road.

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WILMERDING - - PENNSYLVANIA

pointed secretary to the general freight agent on the Southern Pacific at Los Angeles, and in April, 1929, he was transferred to San Francisco, Cal., as secretary to the vice-president in charge of system freight traffic, which position he held until his recent promotion.

Chester M. Biggs, whose promotion to general freight agent on the Southern Pacific, with headquarters at Los Angeles, Cal., was announced in the *Railway Age* of March 8, was born at Dallas, Tex., on November 17, 1896, and entered railway service on July 1, 1909 as a clerk for the roundhouse foreman on the Chicago, Milwaukee, St. Paul & Pacific at Seattle, Wash. He later served in various clerical capacities in the yard office, local freight office, car service department, general superintendent's office and the freight claim department. In February, 1917, Mr. Biggs went with the Southern Pacific as a clerk for the district freight and passenger agent at Seattle and a year later was promoted



Chester M. Biggs

to city freight agent. In April, 1922, he was appointed traveling freight and passenger agent and in June, 1925, he was advanced to industrial agent at Portland. Three years later he was appointed general agent at Seattle and in January, 1930, he was appointed district freight and passenger agent at Klamath Falls, Ore. Mr. Biggs was appointed district freight agent at Oakland, Cal., in May, 1931, transferred to San Francisco, Cal., in December, 1935, and promoted to assistant general freight agent at San Francisco in February, 1940, which position he held until his recent promotion.

C. R. Deets, general agent, traffic and operating departments, on the New York, Chicago & St. Louis (Nickel Plate) at Lafayette, Ind., has been promoted to division freight agent at Indianapolis, Ind., succeeding **T. J. Faulconer**, who has been appointed commercial agent at Buffalo, N. Y. **L. I. Muinzer**, a clerk in the passenger agent's office at Lafayette, has been advanced to general agent, traffic and operating departments, at that point, succeeding Mr. Deets.

ENGINEERING AND SIGNALING

W. W. Wilson, division engineer on the Gulf, Colorado & Santa Fe, has been pro-

moted to acting chief engineer, with headquarters as before at Galveston, Tex., succeeding **Kenneth B. Duncan**, who retired on March 31.

Charles H. Splitstone, superintendent of construction of the Erie, has been appointed assistant chief engineer, a newly created position, with headquarters as before at Cleveland, Ohio. The positions of superintendent of construction and principal assistant engineer have been abolished.

H. C. Cosand, division engineer on the Denver & Rio Grande Western at Salt Lake City, Utah, has been promoted to engineer of capital expenditures, a newly created position, with headquarters at Denver, Colo., and **A. L. Kleine**, roadmaster at Helper, Utah, has been advanced to division engineer at Salt Lake City, succeeding Mr. Cosand.

W. F. Petteys, assistant division engineer on the Erie, with headquarters at Buffalo, N. Y., has been promoted to division engineer at Dunmore, Pa., to succeed **L. H. Jentoft**, who has been transferred to Huntington, Ind. Mr. Jentoft replaces **John S. Parsons**, who has been granted a leave of absence to take charge of track construction work at a large government defense project. **Paul Crowe**, general foreman, with headquarters at Hammond, Ind., has been promoted to assistant division engineer at Buffalo, to succeed Mr. Petteys.

MECHANICAL

Paul E. Leonard, roundhouse foreman on the Southern Pacific Lines in Texas & Louisiana at Beaumont, Tex., has been promoted to master mechanic at San Antonio, Tex., succeeding **Fred L. Carson**, who has retired.

C. W. Graham, car shop superintendent of the Wabash, has been promoted to assistant superintendent of the car department, with headquarters as before at Decatur, Ill., succeeding **J. H. Gimpel**, whose death on February 14 was announced in the *Railway Age* of February 22.

Arthur H. Fiedler, master mechanic on the Northern Pacific at Jamestown, N. D., has been promoted to general master mechanic, Eastern district (Lines east of Livingston, Mont.), with headquarters at St. Paul, Minn., succeeding **G. L. Ernstrom**. Mr. Ernstrom has been transferred to the Western district, with headquarters at Seattle, Wash., replacing **L. J. Gallagher**, who has retired, and **Jesse A. Cannon**, road foreman of engines at Minneapolis, Minn., has been advanced to master mechanic at Jamestown, relieving Mr. Fiedler.

PURCHASES AND STORES

A. T. Babcock, tie and timber agent of the Western Maryland, with headquarters at Baltimore, Md., has retired, effective March 31, and the title of tie and timber agent has been abolished. **P. A. De Hoff** has been appointed lumber agent.

OBITUARY

Harvey W. Wike, who retired as assistant general freight agent on the Northern Pacific at Minneapolis, Minn., on April 1, 1939, died at St. Paul, Minn., on March 28.

Charles S. Stout, division freight agent of the Baltimore division of the Baltimore & Ohio, died on April 7 at his home in Baltimore, Md., after an illness of three months, at the age of 55.

Robert Farnham, assistant chief engineer of the eastern region of the Pennsylvania, with headquarters at Philadelphia, Pa., died of a heart attack on April 8 at his home in Chestnut Hill, Pa., at the age of 63.

Albert L. Ralston, general mechanical superintendent of the New York, New Haven & Hartford, with headquarters at New Haven, Conn., died on April 3 in Pinehurst, N. C., where he was on vacation. Mr. Ralston was born at Amo, Ind., on April 10, 1883, and was graduated from Purdue University in June, 1905, following which he took a special apprenticeship course with the Westinghouse Electric & Manufacturing Company at Pittsburgh, Pa., specializing in railroad work. Dur-



Albert L. Ralston

ing 1906 and the early part of 1907 he worked in the engineering department of Westinghouse on the development of design and construction of the first electric locomotive built for the New Haven, then being assigned by Westinghouse to Stamford, where he remained until 1914. Mr. Ralston entered the service of the New York, New Haven & Hartford as assistant electrical engineer in May, 1914, and in February, 1915, he was appointed assistant to the mechanical superintendent in charge of the maintenance of electric equipment. In May, 1917, he became engineer of electric traction, with headquarters at Grand Central Terminal, and in September, 1918, he was promoted to mechanical superintendent in charge of maintenance of electric equipment, retaining that position until his promotion to assistant general mechanical superintendent at New Haven on November 1, 1932. Mr. Ralston was promoted to general mechanical superintendent in July, 1934, the position he held until his death.